



A3

Sequence Listing

<110> Ashkenazi, Avi J.
Baker, Kevin P.
Botstein, David
Desnoyers, Luc
Eaton, Dan L.
Ferrara, Napoleone
Fong, Sherman
Gerber, Hanspeter
Gerritsen, Mary E.
Goddard, Audrey
Godowski, Paul J.
Grimaldi, J. Christopher
Gurney, Austin L.
Kljavin, Ivar J.
Napier, Mary A.
Pan, James
Paoni, Nicholas F.
Roy, Margaret Ann
Stewart, Timothy A.
Tumas, Daniel
Watanabe, Colin K.
Williams, P. Mickey
Wood, William I.
Zhang, Zemin

<120> Secreted and Transmembrane Polypeptides and Nucleic
Acids Encoding the Same

<130> P2730P1C66

<140> 09/989293

<141> 2001-11-20

<150> 60/049787

<151> 1997-06-16

<150> 60/062250

<151> 1997-10-17

<150> 60/065186

<151> 1997-11-12

<150> 60/065311

<151> 1997-11-13

<150> 60/066770

<151> 1997-11-24

<150> 60/075945

<151> 1998-02-25

<150> 60/078910

<151> 1998-03-20

<150> 60/083322

<151> 1998-04-28

<150> 60/084600

<151> 1998-05-07

<150> 60/087106

<151> 1998-05-28

<150> 60/087607

<151> 1998-06-02

<150> 60/087609

<151> 1998-06-02

<150> 60/087759

<151> 1998-06-02

<150> 60/087827

<151> 1998-06-03

<150> 60/088021

<151> 1998-06-04

<150> 60/088025

<151> 1998-06-04

<150> 60/088026

<151> 1998-06-04

<150> 60/088028

<151> 1998-06-04

<150> 60/088029

<151> 1998-06-04

<150> 60/088030

<151> 1998-06-04

<150> 60/088033

<151> 1998-06-04

<150> 60/088326

<151> 1998-06-04

<150> 60/088167

<151> 1998-06-05

<150> 60/088202

<151> 1998-06-05

<150> 60/088212

<151> 1998-06-05

<150> 60/088217

<151> 1998-06-05

<150> 60/088655

<151> 1998-06-09

<150> 60/088734

<151> 1998-06-10

<150> 60/088738

<151> 1998-06-10

<150> 60/088742

<151> 1998-06-10

<150> 60/088810

<151> 1998-06-10

<150> 60/088824

<151> 1998-06-10

<150> 60/088826

<151> 1998-06-10

<150> 60/088858

<151> 1998-06-11

<150> 60/088861

<151> 1998-06-11

<150> 60/088876

<151> 1998-06-11

<150> 60/089105

<151> 1998-06-12

<150> 60/089440

<151> 1998-06-16

<150> 60/089512

<151> 1998-06-16

<150> 60/089514

<151> 1998-06-16

<150> 60/089532

<151> 1998-06-17

<150> 60/089538

<151> 1998-06-17

<150> 60/089598

<151> 1998-06-17

<150> 60/089599

<151> 1998-06-17

<150> 60/089600

<151> 1998-06-17

<150> 60/089653

<151> 1998-06-17

<150> 60/089801

<151> 1998-06-18

<150> 60/089907

<151> 1998-06-18

<150> 60/089908

<151> 1998-06-18

<150> 60/089947

<151> 1998-06-19

<150> 60/089948

<151> 1998-06-19

<150> 60/089952

<151> 1998-06-19

<150> 60/090246

<151> 1998-06-22

<150> 60/090252

<151> 1998-06-22

<150> 60/090254

<151> 1998-06-22

<150> 60/090349

<151> 1998-06-23

<150> 60/090355

<151> 1998-06-23

<150> 60/090429

<151> 1998-06-24

<150> 60/090431

<151> 1998-06-24

<150> 60/090435

<151> 1998-06-24

<150> 60/090444

<151> 1998-06-24

<150> 60/090445

<151> 1998-06-24

<150> 60/090472

<151> 1998-06-24

<150> 60/090535

<151> 1998-06-24

<150> 60/090540

<151> 1998-06-24

<150> 60/090542

<151> 1998-06-24

<150> 60/090557

<151> 1998-06-24

<150> 60/090676

<151> 1998-06-25

<150> 60/090678

<151> 1998-06-25

<150> 60/090690

<151> 1998-06-25

<150> 60/090694

<151> 1998-06-25

<150> 60/090695

<151> 1998-06-25

<150> 60/090696

<151> 1998-06-25

<150> 60/090862

<151> 1998-06-26

<150> 60/090863

<151> 1998-06-26

<150> 60/091360

<151> 1998-07-01

<150> 60/091478

<151> 1998-07-02

<150> 60/091544

<151> 1998-07-01

<150> 60/091519

<151> 1998-07-02

<150> 60/091626

<151> 1998-07-02

<150> 60/091633

<151> 1998-07-02

<150> 60/091978

<151> 1998-07-07

<150> 60/091982

<151> 1998-07-07

<150> 60/092182

<151> 1998-07-09

<150> 60/092472
<151> 1998-07-10

<150> 60/091628
<151> 1998-07-02

<150> 60/091646
<151> 1998-07-02

<150> 60/091673
<151> 1998-07-02

<150> 60/093339
<151> 1998-07-20

<150> 60/094651
<151> 1998-07-30

<150> 60/095282
<151> 1998-08-04

<150> 60/095285
<151> 1998-08-04

<150> 60/095302
<151> 1998-08-04

<150> 60/095318
<151> 1998-08-04

<150> 60/095321
<151> 1998-08-04

<150> 60/095301
<151> 1998-08-04

<150> 60/095325
<151> 1998-08-04

<150> 60/095916
<151> 1998-08-10

<150> 60/095929
<151> 1998-08-10

<150> 60/096012
<151> 1998-08-10

<150> 60/096143
<151> 1998-08-11

<150> 60/096146
<151> 1998-08-11

<150> 60/096329

<151> 1998-08-12

<150> 60/096757

<151> 1998-08-17

<150> 60/096766

<151> 1998-08-17

<150> 60/096768

<151> 1998-08-17

<150> 60/096773

<151> 1998-08-17

<150> 60/096791

<151> 1998-08-17

<150> 60/096867

<151> 1998-08-17

<150> 60/096891

<151> 1998-08-17

<150> 60/096894

<151> 1998-08-17

<150> 60/096895

<151> 1998-08-17

<150> 60/096897

<151> 1998-08-17

<150> 60/096949

<151> 1998-08-18

<150> 60/096950

<151> 1998-08-18

<150> 60/096959

<151> 1998-08-18

<150> 60/096960

<151> 1998-08-18

<150> 60/097022

<151> 1998-08-18

<150> 60/097141

<151> 1998-08-19

<150> 60/097218

<151> 1998-08-20

<150> 60/097661

<151> 1998-08-24

<150> 60/097952



<151> 1998-08-26

<150> 60/097954
<151> 1998-08-26

<150> 60/097955
<151> 1998-08-26

<150> 60/098014
<151> 1998-08-26

<150> 60/097971
<151> 1998-08-26

<150> 60/097974
<151> 1998-08-26

<150> 60/097978
<151> 1998-08-26

<150> 60/097986
<151> 1998-08-26

<150> 60/097979
<151> 1998-08-26

<150> 60/098525
<151> 1998-08-31

<150> 60/100634
<151> 1998-09-16

<150> 60/100858
<151> 1998-09-17

<150> 60/113296
<151> 1998-12-22

<150> 60/123957
<151> 1999-03-12

<150> 60/141037
<151> 1999-06-23

<150> 60/143048
<151> 1999-07-07

<150> 60/144758
<151> 1999-07-20

<150> 60/145698
<151> 1999-07-26

<150> 60/146222
<151> 1999-07-28

<150> 60/149396

<151> 1999-08-17

<150> 60/158663
<151> 1999-10-08

<150> 60/213637
<151> 2000-06-23

<150> 60/230978
<151> 2000-09-07

<150> 08/743698
<151> 1996-11-06

<150> 08/876698
<151> 1997-06-16

<150> 08/965056
<151> 1997-11-05

<150> 09/105413
<151> 1998-06-26

<150> 09/168978
<151> 1998-10-07

<150> 09/187368
<151> 1998-11-06

<150> 09/202054
<151> 1998-12-07

<150> 09/218517
<151> 1998-12-22

<150> 09/254311
<151> 1999-03-03

<150> 09/254460
<151> 1999-03-09

<150> 09/267213
<151> 1999-03-12

<150> 09/284291
<151> 1999-04-12

<150> 09/380137
<151> 1999-08-25

<150> 09/380138
<151> 1998-08-25

<150> 09/380139
<151> 1999-08-25

<150> 09/403296

<151> 1999-10-18

<150> 09/423844

<151> 1999-11-12

<150> 09/664610

<151> 2000-09-18

<150> 09/665350

<151> 2000-09-18

<150> 09/709238

<151> 2000-11-08

<150> 09/808689

<151> 2001-03-14

<150> 09/854816

<151> 2001-05-15

<150> 09/866028

<151> 2001-05-25

<150> 09/866034

<151> 2001-05-25

<150> 09/872035

<151> 2001-06-01

<150> 09/882636

<151> 2001-06-14

<150> 09/941,992

<151> 2001-08-28

<150> PCT/US97/20069

<151> 1997-11-05

<150> PCT/US98/19330

<151> 1998-09-16

<150> PCT/US98/19437

<151> 1998-09-17

<150> PCT/US98/21141

<151> 1998-10-07

<150> PCT/US98/25108

<151> 1998-12-01

<150> PCT/US99/00106

<151> 1999-01-05

<150> PCT/US99/05028

<151> 1999-03-08

<150> PCT/US99/12252

<151> 1999-06-02

<150> PCT/US99/21090

<151> 1999-09-15

<150> PCT/US99/21547

<151> 1999-09-15

<150> PCT/US99/28313

<151> 1999-11-30

<150> PCT/US99/28301

<151> 1999-12-01

<150> PCT/US99/28634

<151> 1999-12-01

<150> PCT/US99/30095

<151> 1999-12-16

<150> PCT/US99/30911

<151> 1999-12-20

<150> PCT/US00/00219

<151> 2000-01-05

<150> PCT/US00/00376

<151> 2000-01-06

<150> PCT/US00/03565

<151> 2000-02-11

<150> PCT/US00/04341

<151> 2000-02-18

<150> PCT/US00/04414

<151> 2000-02-22

<150> PCT/US00/04914

<151> 2000-02-24

<150> PCT/US00/05004

<151> 2000-02-24

<150> PCT/US00/05841

<151> 2000-03-02

<150> PCT/US00/06319

<151> 2000-03-10

<150> PCT/US00/06884

<151> 2000-03-15

<150> PCT/US00/07377

<151> 2000-03-20

<150> PCT/US00/08439

<151> 2000-03-30

<150> PCT/US00/13358

<151> 2000-05-15

<150> PCT/US00/13705

<151> 2000-05-17

<150> PCT/US00/14042

<151> 2000-05-22

<150> PCT/US00/14941

<151> 2000-05-30

<150> PCT/US00/15264

<151> 2000-06-02

<150> PCT/US00/20710

<151> 2000-07-28

<150> PCT/US00/22031

<151> 2000-08-11

<150> PCT/US00/23522

<151> 2000-08-23

<150> PCT/US00/23328

<151> 2000-08-24

<150> PCT/US00/30952

<151> 2000-11-08

<150> PCT/US00/32678

<151> 2000-12-01

<150> PCT/US01/06520

<151> 2001-02-28

<150> PCT/US01/17800

<151> 2001-06-01

<150> PCT/US01/19692

<151> 2001-06-20

<150> PCT/US01/21066

<151> 2001-06-29

<150> PCT/US01/21735

<151> 2001-07-09

<160> 532

<210> 1

<211> 1943

<212> DNA

<213> Homo sapiens

<400> 1
cggaacgctg ggtgcgagga gaaggtgacc ggggaccgag catttcagat 50
ctgctcggta gacctggtgc accaccacca tgttggtgc aaggctggtg 100
tgtctccgga cactaccttc tagggttttc caccagctt tcaccaaggc 150
ctccctgtt gtgaagaatt ccatcacgaa gaatcaatgg ctgttaacac 200
ctagcaggga atatgccacc aaaacaagaa ttgggatccg gcgtgggaga 250
actggccaag aactcaaaga ggcagcattg gaaccatcga tggaaaaaat 300
atttaaaatt gatcagatgg gaagatggtt tgttgctgga ggggctgctg 350
ttggtcttgg agcattgtgc tactatggct tgggactgtc taatgagatt 400
ggagctattg aaaaggctgt aatttggcct cagtatgtca aggatagaat 450
tcattccacc tatatgtact tagcaggag tattggttta acagctttgt 500
ctgccatagc aatcagcaga acgcctgttc tcatgaactt catgatgaga 550
ggctcttggg tgacaattgg tgtgacctt gcagccatgg ttggagctgg 600
aatgctggta cgatcaatac catatgacca gagccaggc ccaaagcatc 650
ttgcttgggt gctacattct ggtgtgatgg gtgcagtgg ggctcctctg 700
acaatattag ggggtcctct tctcatcaga gctgcatggt acacagctgg 750
cattgtggga ggcctctcca ctgtggccat gtgtgcgcc agtgaaaagt 800
ttctgaacat ggggtcaccc ctgggagtgg gctgggtct cgtctttgtg 850
tcctcattgg gatctatgtt tcttcacct accaccgtgg ctggtgccac 900
tctttactca gtggcaatgt acgggtgatt agttcttttc agcatgttcc 950
ttctgtatga taccagaaa gtaatcaagc gtgcagaagt atcaccaatg 1000
tatggagttc aaaaatatga tccattaac tcgatgctga gtatctacat 1050
ggatacatta aatatattta tgcgagttgc aactatgctg gcaactggag 1100
gcaacagaaa gaaatgaagt gactcagctt ctggcttctc tgctacatca 1150
aatatcttgt ttaatggggc agatatgcat taaatagttt gtacaagcag 1200
ctttcgttga agtttagaag ataagaaaca tgatcatata tttaaattgt 1250
ccggaatgt gatgcctcag gtctgcctt ttttctggag aataaatgca 1300
gtaatcctct ccaaataag cacacacatt ttcaattctc atgtttgagt 1350
gattttaaaa tgttttgggt aatgtgaaaa ctaaagtttg tgtcatgaga 1400

atgtaagtct tttttctact ttaaaattta gtaggttcac tgagtaacta 1450
 aaatttagca aacctgtgtt tgcataatattt tttggagtgc agaataattgt 1500
 aattaatgtc ataagtgatt tggagctttg gtaaaggagac cagagagaag 1550
 gagtcacctg cagtcctttt tttttttaaa tacttagaac ttagcacttg 1600
 tgttattgat tagtgaggag ccagtaagaa acatctgggt atttggaac 1650
 aagtggcatc tgttacattc atttgctgaa cttacaaaa ctgttcatcc 1700
 tgaaacaggc acaggtgatg cattctcctg ctgttgcttc tcagtgtctt 1750
 ctttccaata tagatgtggt catgtttgac ttgtacagaa tgtaaatcat 1800
 acagagaatc cttgatggaa ttatatatgt gtgttttact tttgaatgtt 1850
 acaaaaggaa ataactttta aactattctc aagagaaaat attcaaagca 1900
 tgaaatatgt tgctttttcc agaatacaaa cagtatactc atg 1943

<210> 2

<211> 345

<212> PRT

<213> Homo sapiens

<400> 2

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Leu | Ala | Ala | Arg | Leu | Val | Cys | Leu | Arg | Thr | Leu | Pro | Ser | Arg | 1 | 5 | 10 | 15 |
| Val | Phe | His | Pro | Ala | Phe | Thr | Lys | Ala | Ser | Pro | Val | Val | Lys | Asn | 20 | 25 | 30 | |
| Ser | Ile | Thr | Lys | Asn | Gln | Trp | Leu | Leu | Thr | Pro | Ser | Arg | Glu | Tyr | 35 | 40 | 45 | |
| Ala | Thr | Lys | Thr | Arg | Ile | Gly | Ile | Arg | Arg | Gly | Arg | Thr | Gly | Gln | 50 | 55 | 60 | |
| Glu | Leu | Lys | Glu | Ala | Ala | Leu | Glu | Pro | Ser | Met | Glu | Lys | Ile | Phe | 65 | 70 | 75 | |
| Lys | Ile | Asp | Gln | Met | Gly | Arg | Trp | Phe | Val | Ala | Gly | Gly | Ala | Ala | 80 | 85 | 90 | |
| Val | Gly | Leu | Gly | Ala | Leu | Cys | Tyr | Tyr | Gly | Leu | Gly | Leu | Ser | Asn | 95 | 100 | 105 | |
| Glu | Ile | Gly | Ala | Ile | Glu | Lys | Ala | Val | Ile | Trp | Pro | Gln | Tyr | Val | 110 | 115 | 120 | |
| Lys | Asp | Arg | Ile | His | Ser | Thr | Tyr | Met | Tyr | Leu | Ala | Gly | Ser | Ile | 125 | 130 | 135 | |
| Gly | Leu | Thr | Ala | Leu | Ser | Ala | Ile | Ala | Ile | Ser | Arg | Thr | Pro | Val | 140 | 145 | 150 | |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Leu Met Asn Phe | Met Met Arg Gly Ser | Trp Val Thr Ile Gly Val | 155 | 160 | 165 |
| Thr Phe Ala Ala | Met Val Gly Ala Gly | Met Leu Val Arg Ser Ile | 170 | 175 | 180 |
| Pro Tyr Asp Gln | Ser Pro Gly Pro Lys | His Leu Ala Trp Leu Leu | 185 | 190 | 195 |
| His Ser Gly Val | Met Gly Ala Val Val | Ala Pro Leu Thr Ile Leu | 200 | 205 | 210 |
| Gly Gly Pro Leu | Leu Ile Arg Ala Ala | Trp Tyr Thr Ala Gly Ile | 215 | 220 | 225 |
| Val Gly Gly Leu | Ser Thr Val Ala Met | Cys Ala Pro Ser Glu Lys | 230 | 235 | 240 |
| Phe Leu Asn Met | Gly Ala Pro Leu Gly | Val Gly Leu Gly Leu Val | 245 | 250 | 255 |
| Phe Val Ser Ser | Leu Gly Ser Met Phe | Leu Pro Pro Thr Thr Val | 260 | 265 | 270 |
| Ala Gly Ala Thr | Leu Tyr Ser Val Ala | Met Tyr Gly Gly Leu Val | 275 | 280 | 285 |
| Leu Phe Ser Met | Phe Leu Leu Tyr Asp | Thr Gln Lys Val Ile Lys | 290 | 295 | 300 |
| Arg Ala Glu Val | Ser Pro Met Tyr Gly | Val Gln Lys Tyr Asp Pro | 305 | 310 | 315 |
| Ile Asn Ser Met | Leu Ser Ile Tyr Met | Asp Thr Leu Asn Ile Phe | 320 | 325 | 330 |
| Met Arg Val Ala | Thr Met Leu Ala Thr | Gly Gly Asn Arg Lys Lys | 335 | 340 | 345 |

<210> 3

<211> 43

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 3

tgtaaaacga cggccagtta aatagacctg caattattaa tct 43

<210> 4

<211> 41

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 4
caggaaacag ctatgaccac ctgcacacct gcaaatccat t 41

<210> 5

<211> 3033

<212> DNA

<213> Homo sapiens

<400> 5

gaaggctgcc tcgctgggtcc gaattcgggtg gcgccacgtc cgcccgtctc 50
cgcccttctgc atcgcggtctt cggcgggttc cacctagaca cctaacagtc 100
gcggagccgg ccgcgtcgtg agggggtcgg cacggggagt cgggcgggtct 150
tgtgcattctt ggctacctgt gggtcgaaga tgtcggacat cggagactgg 200
ttcaggagca tcccggcgat cagcgcctat tgggttcgccg ccaccgtcgc 250
cgtgcccttg gtcggaacac tcggcctcat cagcccggcc tacctcttcc 300
tctggcccga agccttccctt tatcgctttc agatttggag gccaatcact 350
gccacctttt atttccctgt gggtcaggga actggatttc tttatttggg 400
caatttatat ttcttatatc agtattctac gcgacttgaa acaggagctt 450
ttgatgggag gccagcagac tatttattca tgctcctctt taactggatt 500
tgcacgtgta ttactggctt agcaatggat atgcagttgc tgatgattcc 550
tctgatcatg tcagtacttt atgtctgggc ccagctgaac agagacatga 600
ttgtatcatt ttggtttggg acacgattta aggcctgcta tttaccctgg 650
gttatccttg gattcaacta tatcatcgga ggctcggtaa tcaatgagct 700
tattggaaat ctggttggac atctttatctt tttcctaatag ttcagatacc 750
caatggactt gggaggaaga aattttctat ccacacctca gtttttgtac 800
cgctggctgc ccagtaggag aggaggagta tcaggatttg gtgtgcccc 850
tgctagcatg aggcgagctg ctgatcagaa tggcggaggc gggagacaca 900
actggggcca gggctttcga cttggagacc agtgaagggg cggcctcggg 950
cagccgctcc tctcaagcca catttcctcc cagtgcctggg tgcacttaac 1000
aactgcgttc tggctaacac tggtggacct gaccacact gaatgtagtc 1050
tttcagtacg agacaaagt tcttaaatcc cgaagaaaaa tataagtgtt 1100
ccacaagttt cagcattctc attcaagtcc ttactgctgt gaagaacaaa 1150

taccaactgt gcaaattgca aaactgacta ctttttttgg tgtcttctct 1200
tctccccctt cegtctgaat aatgggtttt agcgggtcct aatctgctgg 1250
cattgagctg gggctgggtc accaaaccct tcccaaaagg accttatctc 1300
tttcttgcaac acatgcctct ctcccacttt tcccaacccc cacatttgca 1350
actagaaaaa gttgcccata aaattgctct gcccttgaca ggttctgtta 1400
tttattgact tttgccaagg ctggtcacaa caatcatatt cacgttattt 1450
tccccctttg gtggcagaac tgttaccaat agggggagaa gacagccacg 1500
gatgaagcgt ttctcagctt ttggaattgc ttcgactgac atccgttggt 1550
aaccgtttgc cactcttcag atatttttta taaaaaaagt accactgagt 1600
tcatgagggc cacagattgg ttattaatga gatacgaggg ttggtgctgg 1650
gtgtttgttt cctgagctaa gtgatcaaga ctgtagtgga gttgcagcta 1700
acatgggtta ggtttaaacc atgggggatg caccctttg cgtttcatat 1750
gtagccctac tggctttgtg tagctggagt agttgggttg ctttgtgtta 1800
ggaggatcca gatcatgttg gctacagggg gatgctctct ttgagaggtc 1850
ctgggcattg attccccatt caatctcatt ctggatatgt gttcattgag 1900
taaaggagga gagaccctca tacgctattt aaatgtcact tttttgccta 1950
tcccccgctt tttggtcatg tttcaattaa ttgtgaggaa ggcgcagctc 2000
ctctctgcac gtagatcatt ttttaaagct aatgtaagca catctaaggg 2050
aataacatga ttttaagggtt aaatggcttt agaatcattt gggtttgagg 2100
gtgtgtttatt ttgagtcatg aatgtacaag ctctgtgaat cagaccagct 2150
taaataccca cacctttttt tcgtaggttg gcttttccta tcagagcttg 2200
gctcataacc aaataaagtt ttttgaaggc catggctttt cacacagtta 2250
ttttatttta tgacgttatc tgaaagcaga ctgttaggag cagtattgag 2300
tggctgtcac actttgaggc aactaaaaag gcttcaaacg ttttgatcag 2350
tttcttttca ggaaacattg tgctctaaca gtatgactat tctttcccc 2400
actcttaaac agtgtgatgt gtgttatcct aggaaatgag agttggcaaa 2450
caacttctca ttttgaatag agtttgtgtg tacttctcca tatttaattt 2500
atatgataaa ataggtgggg agagtctgaa ccttaactgt catgttttgt 2550
tgttcatctg tggccacaat aaagtttact tgtaaaattt tagaggccat 2600

tactccaatt atgttgcacg tacactcatt gtacaggcgt ggagactcat 2650
 tgtatgtata agaataatttc tgacagtgag tgacccggag tctctggtgt 2700
 accctcttac cagtcagctg cctgcgagca gtcatttttt cctaaagggt 2750
 tacaagtatt tagaactttt cagttcaggg caaatgttc atgaagttat 2800
 tcctcttaaa catgggttagg aagctgatga cgttattgat tttgtctgga 2850
 ttatgtttct ggaataattt taccaaaaca agctatttga gttttgactt 2900
 gacaaggcaa aacatgacag tggattctct ttacaaatgg aaaaaaaaaa 2950
 tccttatttt gtataaagga cttccctttt tgtaaactaa tcctttttat 3000
 tggtaaaaat tgtaaattaa aatgtgcaac ttg 3033

<210> 6
 <211> 251
 <212> PRT
 <213> Homo sapiens

<400> 6
 Met Ser Asp Ile Gly Asp Trp Phe Arg Ser Ile Pro Ala Ile Thr
 1 5 10 15
 Arg Tyr Trp Phe Ala Ala Thr Val Ala Val Pro Leu Val Gly Lys
 20 25 30
 Leu Gly Leu Ile Ser Pro Ala Tyr Leu Phe Leu Trp Pro Glu Ala
 35 40 45
 Phe Leu Tyr Arg Phe Gln Ile Trp Arg Pro Ile Thr Ala Thr Phe
 50 55 60
 Tyr Phe Pro Val Gly Pro Gly Thr Gly Phe Leu Tyr Leu Val Asn
 65 70 75
 Leu Tyr Phe Leu Tyr Gln Tyr Ser Thr Arg Leu Glu Thr Gly Ala
 80 85 90
 Phe Asp Gly Arg Pro Ala Asp Tyr Leu Phe Met Leu Leu Phe Asn
 95 100 105
 Trp Ile Cys Ile Val Ile Thr Gly Leu Ala Met Asp Met Gln Leu
 110 115 120
 Leu Met Ile Pro Leu Ile Met Ser Val Leu Tyr Val Trp Ala Gln
 125 130 135
 Leu Asn Arg Asp Met Ile Val Ser Phe Trp Phe Gly Thr Arg Phe
 140 145 150
 Lys Ala Cys Tyr Leu Pro Trp Val Ile Leu Gly Phe Asn Tyr Ile
 155 160 165

| | |
|---|-------------------------|
| Ile Gly Gly Ser Val Ile Asn Glu Leu | Ile Gly Asn Leu Val Gly |
| 170 | 175 180 |
| His Leu Tyr Phe Phe Leu Met Phe Arg Tyr Pro Met Asp Leu Gly | |
| 185 | 190 195 |
| Gly Arg Asn Phe Leu Ser Thr Pro Gln Phe Leu Tyr Arg Trp Leu | |
| 200 | 205 210 |
| Pro Ser Arg Arg Gly Gly Val Ser Gly Phe Gly Val Pro Pro Ala | |
| 215 | 220 225 |
| Ser Met Arg Arg Ala Ala Asp Gln Asn Gly Gly Gly Gly Arg His | |
| 230 | 235 240 |
| Asn Trp Gly Gln Gly Phe Arg Leu Gly Asp Gln | |
| 245 | 250 |

<210> 7
 <211> 1373
 <212> DNA
 <213> Homo sapiens

<400> 7
 ggggccgcgg tctagggcgg ctacgtgtgt tgccatagcg accattttgc 50
 attaaactggt tggtagcttc taccctgggg gctgagcgac tgcggggccag 100
 ctcttccccct actccctctc ggctccttgt ggcccaaagg cctaaccggg 150
 gtccggcggt ctggcctagg gatcttcccc gttgcccctt tggggcgggg 200
 tggctgcgga agaagaagac gaggtggagt gggtagtgga gagcatcgcg 250
 gggttcctgc gaggcccaga ctgggtccatc cccatcttgg actttgtgga 300
 acagaaatgt gaagttaact gcaaaggagg gcatgtgata actccaggaa 350
 gccagagacc ggtgattttg gtggcctgtg ttccccttgt ttttgatgat 400
 gaagaagaaa gcaaattgac ctatacagag attcatcagg aatacaaaga 450
 actagttgaa aagctgttag aaggttacct caaagaaatt ggaattaatg 500
 aagatcaatt tcaagaagca tgcacttctc ctcttgcaaa gaccataca 550
 tcacaggcca ttttgcaacc tgtgttgga gcagaagatt ttactatctt 600
 taaagcaatg atgggtccaga aaaacattga aatgcagctg caagccattc 650
 gaataattca agagagaaat ggtgtattac ctgactgctt aaccgatggc 700
 tctgatgtgg tcagtgcct tgaacacgaa gagatgaaaa tcctgaggga 750
 agttcttaga aaatcaaaag aggaatatga ccaggaagaa gaaaggaaga 800

ggaaaaaaca gttatcagag gctaaaacag aagagcccac agtgcattcc 850
 agtgaagctg caataatgaa taattcccaa ggggatgggtg aacattttgc 900
 acaccacccc tcagaagtta aaatgcattt tgctaatacag tcaatagaac 950
 ctttggggaag aaaagtggaa aggtctgaaa cttcctccct cccacaaaaa 1000
 ggctgaaga ttctgggctt agagcatgcg agcattgaag gaccaatagc 1050
 aaacttatca gtacttggaa cagaagaact tcggcaacga gaacactatc 1100
 tcaagcagaa gagagataag ttgatgtcca tgagaaagga tatgaggact 1150
 aaacagatac aaaatatgga gcagaaagga aaaccactg gggaggtaga 1200
 ggaaatgaca gagaaaccag aaatgacagc agaggagaag caaacattac 1250
 taaagaggag attgcttgca gagaaactca aagaagaagt tattaataag 1300
 taataattaa gaacaattta acaaaatgga agttcaaatt gtcttaaaaa 1350
 taaattattt agtccttaca ctg 1373

<210> 8
 <211> 367
 <212> PRT
 <213> Homo sapiens

<400> 8
 Met Ala Ala Glu Glu Glu Asp Glu Val Glu Trp Val Val Glu Ser
 1 5 10 15
 Ile Ala Gly Phe Leu Arg Gly Pro Asp Trp Ser Ile Pro Ile Leu
 20 25 30
 Asp Phe Val Glu Gln Lys Cys Glu Val Asn Cys Lys Gly Gly His
 35 40 45
 Val Ile Thr Pro Gly Ser Pro Glu Pro Val Ile Leu Val Ala Cys
 50 55 60
 Val Pro Leu Val Phe Asp Asp Glu Glu Glu Ser Lys Leu Thr Tyr
 65 70 75
 Thr Glu Ile His Gln Glu Tyr Lys Glu Leu Val Glu Lys Leu Leu
 80 85 90
 Glu Gly Tyr Leu Lys Glu Ile Gly Ile Asn Glu Asp Gln Phe Gln
 95 100 105
 Glu Ala Cys Thr Ser Pro Leu Ala Lys Thr His Thr Ser Gln Ala
 110 115 120
 Ile Leu Gln Pro Val Leu Ala Ala Glu Asp Phe Thr Ile Phe Lys
 125 130 135

| | | | |
|-----------------|---------------------|-----------------|-------------|
| Ala Met Met Val | Gln Lys Asn Ile | Glu Met Gln Leu | Gln Ala Ile |
| | 140 | 145 | 150 |
| Arg Ile Ile Gln | Glu Arg Asn Gly Val | Leu Pro Asp Cys | Leu Thr |
| | 155 | 160 | 165 |
| Asp Gly Ser Asp | Val Val Ser Asp | Leu Glu His Glu | Glu Met Lys |
| | 170 | 175 | 180 |
| Ile Leu Arg Glu | Val Leu Arg Lys | Ser Lys Glu Glu | Tyr Asp Gln |
| | 185 | 190 | 195 |
| Glu Glu Glu Arg | Lys Arg Lys Lys | Gln Leu Ser Glu | Ala Lys Thr |
| | 200 | 205 | 210 |
| Glu Glu Pro Thr | Val His Ser Ser | Glu Ala Ala Ile | Met Asn Asn |
| | 215 | 220 | 225 |
| Ser Gln Gly Asp | Gly Glu His Phe | Ala His Pro Pro | Ser Glu Val |
| | 230 | 235 | 240 |
| Lys Met His Phe | Ala Asn Gln Ser | Ile Glu Pro Leu | Gly Arg Lys |
| | 245 | 250 | 255 |
| Val Glu Arg Ser | Glu Thr Ser Ser | Leu Pro Gln Lys | Gly Leu Lys |
| | 260 | 265 | 270 |
| Ile Pro Gly Leu | Glu His Ala Ser | Ile Glu Gly Pro | Ile Ala Asn |
| | 275 | 280 | 285 |
| Leu Ser Val Leu | Gly Thr Glu Glu | Leu Arg Gln Arg | Glu His Tyr |
| | 290 | 295 | 300 |
| Leu Lys Gln Lys | Arg Asp Lys Leu | Met Ser Met Arg | Lys Asp Met |
| | 305 | 310 | 315 |
| Arg Thr Lys Gln | Ile Gln Asn Met | Glu Gln Lys Gly | Lys Pro Thr |
| | 320 | 325 | 330 |
| Gly Glu Val Glu | Glu Met Thr Glu | Lys Pro Glu Met | Thr Ala Glu |
| | 335 | 340 | 345 |
| Glu Lys Gln Thr | Leu Leu Lys Arg | Arg Leu Leu Ala | Glu Lys Leu |
| | 350 | 355 | 360 |
| Lys Glu Glu Val | Ile Asn Lys | | |
| | 365 | | |

<210> 9

<211> 418

<212> DNA

<213> Homo sapiens

<400> 9

gggcacagca catgtgaagt ttttgatgat gaagaagaaa gcaaattgac 50

ctatacagag attcatcagg aatacaaaga actagttgaa aagctgttag 100

aaggttacct caaagaaatt ggaattaatg aagatcaatt tcaagaagca 150
tgcattctc ctcttgcaaa gaccataca tcacaggcca tttttgcaac 200
ctgtgttggc agcagaagat ttactatct ttaaagcaat gatggtccag 250
aaaaacattg aaatgcagct gcaagccatt cgaataattc aagagagaaa 300
tgggtgtatta cctgactgct taaccgatgg ctctgatgtg gtcagtgacc 350
ttgaacacga agagatgaaa atcctgaggg aagttcttag aaaatcaaaa 400
gaggaatatg accaggaa 418

<210> 10

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 10

ttgacctata cagagattca tc 22

<210> 11

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 11

ctaagaactt ccctcaggat ttt 23

<210> 12

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 12

atgaagatca atttcaagaa gcatgcactt ctctctttgc 40

<210> 13

<211> 2886

<212> DNA

<213> Homo sapiens

<400> 13

gcgtgggtttt tgttctgcaa taggcggctt agagggaggg gctttttcgc 50

ctatacctac tgtagcttct ccacgtatgg accctaaagg ctactgtctgc 100

tactacgggg ctagacagtt actgtctcag ctctaggatg tgcgttcttc 150
cactagaagc tcttctgagg gaggttaatta aaaaacagtg gaatggaaaa 200
acagtgctgt agtcacacctg taatatgctc cttgtcaaca atgtatacat 250
tcctgctagg tgccatattc attgctttta gctcaagtcg catcttacta 300
gtgaagtatt ctgccaatga agaaaacaag tatgattatc ttccaactac 350
tgtgaatgtg tgctcagaac tgggtgaagct agttttctgt gtgcttgtgt 400
cattctgtgt tataaagaaa gatcatcaaa gtagaaattt gaaatatgct 450
tcctggaagg aattctctga tttcatgaag tgggtccattc ctgcctttct 500
ttatttctctg gataacttga ttgtcttcta tgtcctgtcc tatcttcaac 550
cagccatggc tggtatcttc tcaaatttta gcattataac aacagctctt 600
ctattcagga tagtgctgaa gaggcgtcta aactggatcc agtgggcttc 650
cctcctgact ttatTTTTgt ctattgtggc cttgactgcc gggactaaaa 700
ctttacagca caacttggca ggacgtggat ttcatcacga tgcctttttc 750
agcccttcca attcctgcct tcttttcaga agtgagtgtc ccagaaaaga 800
caattgtaca gcaaaggaat ggacttttcc tgaagctaaa tggaacacca 850
cagccagagt tttcagtcac atccgtcttg gcatgggcca tgttcttatt 900
atagtccagt gttttatttc ttcaatggct aatatctata atgaaaagat 950
actgaaggag gggaaccagc tcaactgaaag catcttcata cagaacagca 1000
aactctatTT ctttggcatt ctgtttaatg ggctgactct gggccttcag 1050
aggagtaacc gtgatcagat taagaactgt ggattttttt atggccacag 1100
tgcattttca gtagccctta tttttgtaac tgcattccag ggcctttcag 1150
tggctttcat tctgaagttc ctggataaca tgttccatgt cttgatggcc 1200
caggttacca ctgtcattat cacaacagtg tctgtcctgg tctttgactt 1250
caggccctcc ctggaatttt tcttgggaagc cccatcagtc cttctctcta 1300
tatttattta taatgccagc aagcctcaag ttccggaata cgcacctagg 1350
caagaaagga tccgagatct aagtggcaat ctttgggagc gttccagtgg 1400
ggatggagaa gaactagaaa gacttaccaa acccaagagt gatgagtcag 1450
atgaagatac tttctaactg gtaccacat agtttgcagc tctcttgaac 1500

```

cttattttca cattttcagt gtttgtaata tttatctttt cactttgata 1550
aaccagaaat gtttctaaat cctaattatc tttgcatata tctagctact 1600
ccctaaatgg ttccatccaa ggcttagagt acccaaaggc taagaaattc 1650
taaagaactg atacaggagt aacaatatga agaattcatt aatatctcag 1700
tacttgataa atcagaaaagt tatatgtgca gattattttc cttggccttc 1750
aagcttccaa aaaacttgta ataatcatgt tagctatagc ttgtatatac 1800
acatagagat caatttgcca aatattcaca atcatgtagt tctagtttac 1850
atgccaaagt cttccctttt taacattata aaagctaggt tgtctcttga 1900
attttgaggc cctagagata gtcattttgc aagtaaagag caacgggacc 1950
ctttctaaaa acgttggttg aaggacctaa atacctggcc ataccataga 2000
tttgggatga tgtagtctgt gctaaatatt ttgctgaaga agcagtttct 2050
cagacacaac atctcagaat ttttaattttt agaaattcat gggaaattgg 2100
atttttgtaa taatcttttg atgttttaaa cattgggtcc ctagtcacca 2150
tagttaccac ttgtatttta agtcatttaa acaagccacg gtggggcctt 2200
tttctcctca gtttgaggag aaaaatcttg atgtcattac tcctgaatta 2250
ttacattttg gagaataaga gggcatttta ttttattagt tactaattca 2300
agctgtgact attgtatatc tttccaagag ttgaaatgct ggcttcagaa 2350
tcataccaga ttgtcagtga agctgatgcc taggaacttt taaagggatc 2400
ctttcaaaag gatcacttag caaacacatg ttgactttta actgatgtat 2450
gaatattaat actctaaaaa tagaaagacc agtaatatat aagtcacttt 2500
acagtgtac ttcacactta aaagtgcag gtatttttca tgggtattttg 2550
catgcagcca gttaactctc gtagatagag aagtcaggtg atagatgata 2600
ttaaaaatta gcaaacaaaa gtgacttgct cagggtcatg cagctgggtg 2650
atgatagaag agtgggcctt aactggcagg cctgtatgtt tacagactac 2700
catactgtaa atatgagctt tatgggtgtc ttctcagaaa cttatacatt 2750
tctgctctcc tttctcctaa gtttcatgca gatgaatata aggtaatata 2800
ctattatata attcatttgt gatatccaca ataatatgac tggcaagaat 2850
tggtggaaat ttgtaattaa aataattatt aaacct 2886

```

<211> 424
<212> PRT
<213> Homo sapiens

<400> 14

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Glu | Lys | Gln | Cys | Cys | Ser | His | Pro | Val | Ile | Cys | Ser | Leu | Ser | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Thr | Met | Tyr | Thr | Phe | Leu | Leu | Gly | Ala | Ile | Phe | Ile | Ala | Leu | Ser | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Ser | Ser | Arg | Ile | Leu | Leu | Val | Lys | Tyr | Ser | Ala | Asn | Glu | Glu | Asn | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Lys | Tyr | Asp | Tyr | Leu | Pro | Thr | Thr | Val | Asn | Val | Cys | Ser | Glu | Leu | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Val | Lys | Leu | Val | Phe | Cys | Val | Leu | Val | Ser | Phe | Cys | Val | Ile | Lys | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Lys | Asp | His | Gln | Ser | Arg | Asn | Leu | Lys | Tyr | Ala | Ser | Trp | Lys | Glu | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Phe | Ser | Asp | Phe | Met | Lys | Trp | Ser | Ile | Pro | Ala | Phe | Leu | Tyr | Phe | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Leu | Asp | Asn | Leu | Ile | Val | Phe | Tyr | Val | Leu | Ser | Tyr | Leu | Gln | Pro | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Ala | Met | Ala | Val | Ile | Phe | Ser | Asn | Phe | Ser | Ile | Ile | Thr | Thr | Ala | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Leu | Leu | Phe | Arg | Ile | Val | Leu | Lys | Arg | Arg | Leu | Asn | Trp | Ile | Gln | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Trp | Ala | Ser | Leu | Leu | Thr | Leu | Phe | Leu | Ser | Ile | Val | Ala | Leu | Thr | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Ala | Gly | Thr | Lys | Thr | Leu | Gln | His | Asn | Leu | Ala | Gly | Arg | Gly | Phe | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| His | His | Asp | Ala | Phe | Phe | Ser | Pro | Ser | Asn | Ser | Cys | Leu | Leu | Phe | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Arg | Ser | Glu | Cys | Pro | Arg | Lys | Asp | Asn | Cys | Thr | Ala | Lys | Glu | Trp | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Thr | Phe | Pro | Glu | Ala | Lys | Trp | Asn | Thr | Thr | Ala | Arg | Val | Phe | Ser | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| His | Ile | Arg | Leu | Gly | Met | Gly | His | Val | Leu | Ile | Ile | Val | Gln | Cys | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Phe | Ile | Ser | Ser | Met | Ala | Asn | Ile | Tyr | Asn | Glu | Lys | Ile | Leu | Lys | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Glu | Gly | Asn | Gln | Leu | Thr | Glu | Ser | Ile | Phe | Ile | Gln | Asn | Ser | Lys | |

| 260 | | | | | | | | | | 265 | | | | | 270 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Leu | Tyr | Phe | Phe | Gly | Ile | Leu | Phe | Asn | Gly | Leu | Thr | Leu | Gly | Leu | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Gln | Arg | Ser | Asn | Arg | Asp | Gln | Ile | Lys | Asn | Cys | Gly | Phe | Phe | Tyr | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Gly | His | Ser | Ala | Phe | Ser | Val | Ala | Leu | Ile | Phe | Val | Thr | Ala | Phe | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| Gln | Gly | Leu | Ser | Val | Ala | Phe | Ile | Leu | Lys | Phe | Leu | Asp | Asn | Met | | | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | | | |
| Phe | His | Val | Leu | Met | Ala | Gln | Val | Thr | Thr | Val | Ile | Ile | Thr | Thr | | | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | | | |
| Val | Ser | Val | Leu | Val | Phe | Asp | Phe | Arg | Pro | Ser | Leu | Glu | Phe | Phe | | | | | |
| | | | | 350 | | | | | 355 | | | | | 360 | | | | | |
| Leu | Glu | Ala | Pro | Ser | Val | Leu | Leu | Ser | Ile | Phe | Ile | Tyr | Asn | Ala | | | | | |
| | | | | 365 | | | | | 370 | | | | | 375 | | | | | |
| Ser | Lys | Pro | Gln | Val | Pro | Glu | Tyr | Ala | Pro | Arg | Gln | Glu | Arg | Ile | | | | | |
| | | | | 380 | | | | | 385 | | | | | 390 | | | | | |
| Arg | Asp | Leu | Ser | Gly | Asn | Leu | Trp | Glu | Arg | Ser | Ser | Gly | Asp | Gly | | | | | |
| | | | | 395 | | | | | 400 | | | | | 405 | | | | | |
| Glu | Glu | Leu | Glu | Arg | Leu | Thr | Lys | Pro | Lys | Ser | Asp | Glu | Ser | Asp | | | | | |
| | | | | 410 | | | | | 415 | | | | | 420 | | | | | |

Glu Asp Thr Phe

<210> 15
 <211> 755
 <212> DNA
 <213> Homo sapiens

<400> 15
 cgtgctgcg caatgggtgt cgggtccgct ttttcccaat ccggacgtaa 50
 tcgtggtttt tgttctgcaa taggcggctt agagggaggg gctttttcgc 100
 ctatacctac tgtagcttct ccacgtatgg accctaaagg ctactgctgc 150
 tactacgggg ctagacagtt actgtctcag ctctaggatg tgcgttcttc 200
 cactagaagc tcttctgagg gaggtaatta aaaaacagtg gaatggaaaa 250
 acagtgcgtg agtcacctcg taatatgctc cttgtcaaca atgtatacat 300
 tcctgctagg tgccatattc attgctttaa gctcaagtcg catcttacta 350
 gtgaagtatt ctgccaatga agaaaacaag tatgattatc ttccaactac 400

tgtgaatgtg tgctcagaac tgggtgaagct agttttctgt gtgcttgtgt 450
cattctgtgt tataaagaaa gatcatcaaa gtagaaattt gaaatatgct 500
tcctggaagg aattctctga tttcatgaag tgggccattc ctgcctttct 550
ttatttcttg gataacttga ttgtcttcta tgtcctgtcc tatcttcaac 600
cagccatggc tgttatcttc tcaaatttta gcattataac aacagctctt 650
ctattcagga tagtgctgaa gaggcgtcta aactggatcc agtgggcttc 700
cctcctgact ttatTTTTgt ctattgtggc cttgactgcc gggactaaaa 750
cttta 755

<210> 16

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 16

ctatacctac tgtagcttct 20

<210> 17

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 17

tcagagaatt ccttccagga 20

<210> 18

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 18

acagtgtgt agtcacctg taatatgctc cttgtcaaca 40

<210> 19

<211> 2142

<212> DNA

<213> Homo sapiens

<400> 19

cggacgcgtg ggcggacgcg tgggcggacg cgtggggccg gcttggctag 50

cgcgcgccgg ccgtggctaa ggctgctacg aagcgagctt gggaggagca 100
gcccgcctgcg gggcagagga gcatcccgtc taccaggtcc caagcggcgt 150
ggcccgcggg tcatggccaa aggagaaggc gccgagagcg gctccgcggc 200
ggggctgcta cccaccagca tcctccaaag cactgaacgc ccggcccagg 250
tgaagaaaga accgaaaaag aagaaacaac agttgtctgt ttgcaacaag 300
ctttgctatg cacttggggg agccccctac caggtgacgg gctgtgccct 350
gggtttcttc cttcagatct acctattgga tgtggctcag gtgggccctt 400
tctctgcctc catcatcctg tttgtgggcc gagcctggga tgccatcaca 450
gacccccctg tgggcctctg catcagcaaa tccccctgga cctgcctggg 500
tcgccttatg ccctggatca tcttctccac gccctggcc gtcattgcct 550
acttctcat ctggttcgtg cccgacttcc cacacggcca gacctattgg 600
tacctgcttt tctattgcct ctttgaaaca atggtcacgt gtttccatgt 650
tccctactcg gctctcacca tgttcacag caaccgagca gactgagcgg 700
gattctgcca ccgcctatcg gatgactgtg gaagtgctgg gcacagtgt 750
gggcacggcg atccaggagc aaatcgtggg ccaagcagac acgccttggt 800
tccaggactt caatagctct acagtagctt cacaaagtgc caaccataca 850
catggcacca cttcacacag ggaaacgcaa aaggcatacc tgctggcagc 900
gggggtcatt gtctgtatct atataatctg tgctgtcatc ctgatcctgg 950
gcgtgcggga gcagagagaa ccctatgaag ccagcagtc tgagccaatc 1000
gcctacttcc ggggcctacg gctgggtcatg agccacggcc catacatcaa 1050
acttattact ggcttctct tccctcctt ggctttcatg ctgggtggagg 1100
ggaactttgt cttgttttgc acctacacct tgggcttccg caatgaattc 1150
cagaatctac tcctggccat catgctctcg gccactttaa ccattcccat 1200
ctggcagtgg ttcttgaccc ggtttgcaa gaagacagct gtatatgttg 1250
ggatctcatc agcagtgcc tttctcatct tgggtggcct catggagagt 1300
aacctcatca ttacatatgc ggtagctgtg gcagctggca tcagtgtggc 1350
agctgccttc ttactacctt ggtccatgct gcctgatgtc attgacgact 1400
tccatctgaa gcagccccac ttccatggaa ccgagcccat cttcttctcc 1450
ttctatgtct tcttcaccaa gtttgctctt ggagtgtcac tgggcatttc 1500

taccctcagt ctggactttg cagggtagca gaccctgggc tgctcgcagc 1550
cggaacgtgt caagtttaca ctgaacatgc tcgtgaccat ggctcccata 1600
gttctcatcc tgctgggcct gctgctcttc aaaatgtacc ccattgatga 1650
ggagaggcgg cggcagaata agaaggccct gcaggcactg agggacgagg 1700
ccagcagctc tggctgctca gaaacagact ccacagagct ggctagcatc 1750
ctctagggcc cgccacgttg cccgaagcca ccatgcagaa ggccacagaa 1800
gggatcagga cctgtctgcc ggcttgctga gcagctggac tgcaggtgct 1850
aggaagggaa ctgaagactc aaggaggtgg cccaggacac ttgctgtgct 1900
cactgtgggg ccggctgctc tgtggcctcc tgctcccct ctgctgcct 1950
gtggggccaa gccctggggc tgccactgtg aatatgccaa ggactgatcg 2000
ggcctagccc ggaacactaa tgtagaaacc ttttttttac agagcctaata 2050
taataactta atgactgtgt acatagcaat gtgtgtgtat gtatatgtct 2100
gtgagctatt aatgttatta attttcataa aagctggaaa gc 2142

<210> 20

<211> 458

<212> PRT

<213> Homo sapiens

<400> 20

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Trp | Leu | Arg | Trp | Ala | Leu | Ser | Leu | Pro | Pro | Ser | Ser | Cys | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Trp | Ala | Glu | Pro | Gly | Met | Pro | Ser | Gln | Thr | Pro | Trp | Trp | Ala | Ser |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ala | Ser | Ala | Asn | Pro | Pro | Gly | Pro | Ala | Trp | Val | Ala | Leu | Cys | Pro |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Gly | Ser | Ser | Ser | Pro | Arg | Pro | Trp | Pro | Ser | Leu | Pro | Thr | Ser | Ser |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ser | Gly | Ser | Cys | Pro | Thr | Ser | His | Thr | Ala | Arg | Pro | Ile | Gly | Thr |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Cys | Phe | Ser | Ile | Ala | Ser | Leu | Lys | Gln | Trp | Ser | Arg | Val | Ser | Met |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Phe | Pro | Thr | Arg | Leu | Ser | Pro | Cys | Ser | Ser | Ala | Thr | Glu | Gln | Thr |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Glu | Arg | Asp | Ser | Ala | Thr | Ala | Tyr | Arg | Met | Thr | Val | Glu | Val | Leu |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | |
|-------------------------------------|-------------------------|-------------------------|
| Gly Thr Val Leu | Gly Thr Ala Ile Gln | Gly Gln Ile Val Gly Gln |
| 125 | 130 | 135 |
| Ala Asp Thr Pro Cys Phe Gln Asp Phe | Asn Ser Ser Thr Val Ala | |
| 140 | 145 | 150 |
| Ser Gln Ser Ala Asn His Thr His Gly | Thr Thr Ser His Arg Glu | |
| 155 | 160 | 165 |
| Thr Gln Lys Ala Tyr Leu Leu Ala Ala | Gly Val Ile Val Cys Ile | |
| 170 | 175 | 180 |
| Tyr Ile Ile Cys Ala Val Ile Leu Ile | Leu Gly Val Arg Glu Gln | |
| 185 | 190 | 195 |
| Arg Glu Pro Tyr Glu Ala Gln Gln Ser | Glu Pro Ile Ala Tyr Phe | |
| 200 | 205 | 210 |
| Arg Gly Leu Arg Leu Val Met Ser His | Gly Pro Tyr Ile Lys Leu | |
| 215 | 220 | 225 |
| Ile Thr Gly Phe Leu Phe Thr Ser Leu | Ala Phe Met Leu Val Glu | |
| 230 | 235 | 240 |
| Gly Asn Phe Val Leu Phe Cys Thr Tyr | Thr Leu Gly Phe Arg Asn | |
| 245 | 250 | 255 |
| Glu Phe Gln Asn Leu Leu Leu Ala Ile | Met Leu Ser Ala Thr Leu | |
| 260 | 265 | 270 |
| Thr Ile Pro Ile Trp Gln Trp Phe Leu | Thr Arg Phe Gly Lys Lys | |
| 275 | 280 | 285 |
| Thr Ala Val Tyr Val Gly Ile Ser Ser | Ala Val Pro Phe Leu Ile | |
| 290 | 295 | 300 |
| Leu Val Ala Leu Met Glu Ser Asn Leu | Ile Ile Thr Tyr Ala Val | |
| 305 | 310 | 315 |
| Ala Val Ala Ala Gly Ile Ser Val Ala | Ala Ala Phe Leu Leu Pro | |
| 320 | 325 | 330 |
| Trp Ser Met Leu Pro Asp Val Ile Asp | Asp Phe His Leu Lys Gln | |
| 335 | 340 | 345 |
| Pro His Phe His Gly Thr Glu Pro Ile | Phe Phe Ser Phe Tyr Val | |
| 350 | 355 | 360 |
| Phe Phe Thr Lys Phe Ala Ser Gly Val | Ser Leu Gly Ile Ser Thr | |
| 365 | 370 | 375 |
| Leu Ser Leu Asp Phe Ala Gly Tyr Gln | Thr Arg Gly Cys Ser Gln | |
| 380 | 385 | 390 |
| Pro Glu Arg Val Lys Phe Thr Leu Asn | Met Leu Val Thr Met Ala | |
| 395 | 400 | 405 |

Pro Ile Val Leu Ile Leu Leu Gly Leu Leu Leu Phe Lys Met Tyr
410 415 420

Pro Ile Asp Glu Glu Arg Arg Arg Gln Asn Lys Lys Ala Leu Gln
425 430 435

Ala Leu Arg Asp Glu Ala Ser Ser Ser Gly Cys Ser Glu Thr Asp
440 445 450

Ser Thr Glu Leu Ala Ser Ile Leu
455

<210> 21
<211> 571
<212> DNA
<213> Homo sapiens

<400> 21
gggaaacgca aaaggcatac ctgctggcag cgggggtcat tgtctgtatc 50
tatataatct gtgctgtcat cctgatcctg ggcgtgcggg agcagagaga 100
accctatgaa gccagcagt ctgagccaat cgcctacttc cggggcctac 150
ggctggtcat gagccacggc ccatacatca aacttattac tggcttcctc 200
ttcacctcct tggctttcat gctggtggag gggaactttg tcttgttttg 250
cacctacacc ttgggcttcc gcaatgaatt ccagaatcta ctcttgcca 300
tcatgctctc ggccacttta accattccca tctggcagtg gttcttgacc 350
cggtttggca agaagacagc tgtatatgtt gggatctcat cagcagtgcc 400
atttctcatc ttggtggccc tcatggagag taacctcatc attacatatg 450
cggtagctgt ggcagctggc atcagtgtgg cagctgcctt ctactaccc 500
tgggtccatgc tgctgatgt cattgacgac ttccatctga agcagcccca 550
cttccatgga accgagccca t 571

<210> 22
<211> 1173
<212> DNA
<213> Homo sapiens

<400> 22
ggggcttcgg cgccagcggc cagcgctagt cggctctggta aggatttaca 50
aaaggtgcag gtatgagcag gtctgaagac taacattttg tgaagttgta 100
aaacagaaaa cctgttagaa atgtggtggt ttcagcaagg cctcagtttc 150
cttccttcag cccttgtaat ttggacatct gctgctttca tattttcata 200
cattactgca gtaacactcc accatataga cccggcttta ccttatatca 250

gtgacactgg tacagtagct ccagaaaaat gcttatttgg ggcaatgcta 300
 aatattgCGG cagttttatg cattgctacc atttatgttc gttataagca 350
 agttcatgct ctgagtcctg aagagaacgt tatcatcaaa ttaaacaagg 400
 ctggccttgt acttggaata ctgagttggt taggactttc tattgtggca 450
 aacttccaga aaacaaccct ttttgctgca catgtaagtg gagctgtgct 500
 tacctttggg atgggctcat tatatatggt tgttcagacc atcctttcct 550
 accaaatgca gcccaaaatc catggcaaac aagtcttctg gatcagactg 600
 ttgttggtta tctggtgtgg agtaagtgca cttagcatgc tgacttgctc 650
 atcagttttg cacagtggca attttgggac tgatttagaa cagaaactcc 700
 attggaaccc cgaggacaaa gggtatgtgc ttcacatgat cactactgca 750
 gcagaatggg ctatgtcatt ttccttcttt gggtttttcc tgacttacat 800
 tcgtgatttt cagaaaattt ctttacgggt ggaagccaat ttacatggat 850
 taaccctcta tgacactgca cttgcccta ttaacaatga acgaacacgg 900
 ctactttcca gagatatttg atgaaaggat aaaatatttc tgtaatgatt 950
 atgattctca gggattgggg aaagggtcac agaagttgct tattcttctc 1000
 tgaaattttc aaccacttaa tcaaggctga cagtaacact gatgaatgct 1050
 gataatcagg aaacatgaaa gaagccattt gatagattat tctaaaggat 1100
 atcatcaaga agactattaa aaacacctat gcctatactt ttttatctca 1150
 gaaaataaag tcaaaagact atg 1173

<210> 23
 <211> 266
 <212> PRT
 <213> Homo sapiens

<400> 23
 Met Trp Trp Phe Gln Gln Gly Leu Ser Phe Leu Pro Ser Ala Leu
 1 5 10 15
 Val Ile Trp Thr Ser Ala Ala Phe Ile Phe Ser Tyr Ile Thr Ala
 20 25 30
 Val Thr Leu His His Ile Asp Pro Ala Leu Pro Tyr Ile Ser Asp
 35 40 45
 Thr Gly Thr Val Ala Pro Glu Lys Cys Leu Phe Gly Ala Met Leu
 50 55 60

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Ile | Ala | Ala | Val | Leu | Cys | Ile | Ala | Thr | Ile | Tyr | Val | Arg | Tyr | 65 | 70 | 75 |
| Lys | Gln | Val | His | Ala | Leu | Ser | Pro | Glu | Glu | Asn | Val | Ile | Ile | Lys | 80 | 85 | 90 |
| Leu | Asn | Lys | Ala | Gly | Leu | Val | Leu | Gly | Ile | Leu | Ser | Cys | Leu | Gly | 95 | 100 | 105 |
| Leu | Ser | Ile | Val | Ala | Asn | Phe | Gln | Lys | Thr | Thr | Leu | Phe | Ala | Ala | 110 | 115 | 120 |
| His | Val | Ser | Gly | Ala | Val | Leu | Thr | Phe | Gly | Met | Gly | Ser | Leu | Tyr | 125 | 130 | 135 |
| Met | Phe | Val | Gln | Thr | Ile | Leu | Ser | Tyr | Gln | Met | Gln | Pro | Lys | Ile | 140 | 145 | 150 |
| His | Gly | Lys | Gln | Val | Phe | Trp | Ile | Arg | Leu | Leu | Leu | Val | Ile | Trp | 155 | 160 | 165 |
| Cys | Gly | Val | Ser | Ala | Leu | Ser | Met | Leu | Thr | Cys | Ser | Ser | Val | Leu | 170 | 175 | 180 |
| His | Ser | Gly | Asn | Phe | Gly | Thr | Asp | Leu | Glu | Gln | Lys | Leu | His | Trp | 185 | 190 | 195 |
| Asn | Pro | Glu | Asp | Lys | Gly | Tyr | Val | Leu | His | Met | Ile | Thr | Thr | Ala | 200 | 205 | 210 |
| Ala | Glu | Trp | Ser | Met | Ser | Phe | Ser | Phe | Phe | Gly | Phe | Phe | Leu | Thr | 215 | 220 | 225 |
| Tyr | Ile | Arg | Asp | Phe | Gln | Lys | Ile | Ser | Leu | Arg | Val | Glu | Ala | Asn | 230 | 235 | 240 |
| Leu | His | Gly | Leu | Thr | Leu | Tyr | Asp | Thr | Ala | Pro | Cys | Pro | Ile | Asn | 245 | 250 | 255 |
| Asn | Glu | Arg | Thr | Arg | Leu | Leu | Ser | Arg | Asp | Ile | | | | | 260 | 265 | |

<210> 24
 <211> 485
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 14, 484
 <223> unknown base

<400> 24
 cggacgcttg ggcngcgcca gcggccagcg ctagtcggtc tggtaagtgc 50
 ctgatgccga gttccgtctc tcgggtcttt tcctgggtccc aggcaaagcg 100

gagcggagat cctcaaacgg cctagtgtt cgcgcttccg gagaaaatca 150
gcggtctaataa taattcctct ggtttggtga agcagttacc aagaatcttc 200
aaccctttcc cacaaaagct aattgagtag acgttcctgt tgagtagacg 250
ttcctgttga ttacaaaaag gtgcaggtat gagcaggtct gaagactaac 300
atattgtgaa gttgtaaaac agaaaacctg ttagaaatgt ggtgggttca 350
gcaaggcctc agtttccttc cttcagccct tgtaatttgg acatctgctg 400
ctttcatatt ttcatacatt actgcagtaa cactccacca tatagaccg 450
gctttacctt atatcagtga cactgggtaca gtanc 485

<210> 25

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 25

acctgttaga aatgtggtgg tttcagcaag gcctcagttt 40

<210> 26

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 26

ggagatagct gctatgggtt cttcaggcac aacttaacat gggaag 46

<210> 27

<211> 1399

<212> DNA

<213> Homo sapiens

<400> 27

cccacgcgtc cgcccgccgc tgcgtcccgg agtgcaagtg agcttctcgg 50

ctgccccgcg ggccgggggtg cggagccgac atgcgcccgc ttctcggcct 100

ccttctggtc ttgcgcgggt gcaccttcgc cttgtacttg ctgtcgacgc 150

gactgccccg cgggcccggaga ctgggctcca ccgaggaggc tggaggcagg 200

tcgctgtggt tcccctccga cctggcagag ctgcggggagc tctctgaggt 250

ccttcgagag taccggaagg agcaccaggc ctacgtgttc ctgctcttct 300

gcggcgcccta cctctacaaa cagggtcttg ccatccccgg ctccagcttc 350

ctgaatgttt tagctggtgc cttgtttggg ccatggctgg ggcttctgct 400
 gtgctgtgtg ttgacctcgg tgggtgccac atgctgctac ctgctctcca 450
 gtatTTTTTgg caaacagtTg gtggTgtcct actttcctga taaagtggcc 500
 ctgctgcaga gaaaggtgga ggagaacaga aacagcttgt tttttttctt 550
 attgtTTTTg agacttttcc ccatgacacc aaactggTtc ttgaacctct 600
 cgccccaat tctgaacatt cccatcgtgc agttcttctt ctcagttctt 650
 atcggtttga tcccatataa tttcatctgt gtgcagacag ggtccatcct 700
 gtcaacccta acctctctgg atgctctttt ctctggggac actgtcttta 750
 agctgttggc cattgccatg gtggcattaa ttcttggaac cctcattaaa 800
 aaatttagtc agaaacatct gcaattgaat gaaacaagta ctgctaata 850
 tatacacagt agaaaagaca catgatctgg attttctgtt tgccacatcc 900
 ctggactcag ttgcttattt gtgtaatgga tgtggTcctc taaagcccct 950
 cattgtTTTT gattgccttc tataggtgat gtggacactg tgcacatg 1000
 tgcagtgtct tttcagaaag gacactctgc tcttgaaggt gtattacatc 1050
 aggttttcaa accagccctg gtgtagcaga cactgcaaca gatgcctcct 1100
 agaaaatgct gtttTgtggc gggcgcggtg gctcacgcct gtaatcccag 1150
 cactttggga ggccgaggcc ggtgattcac aaggTcagga gttcaagacc 1200
 agcctggcca agatggTgaa atcctgtctc taataaaaaat acaaaaatta 1250
 gccaggcgtg gtggcaggca cctgtaatcc cagctactcg ggaggctgag 1300
 gcaggagaat tgcttgaacc aaggTggcag aggtTgcagt aagccaagat 1350
 cacaccactg cactccagcc tgggtgatag agtgagacac tgtcttgac 1399

<210> 28

<211> 264

<212> PRT

<213> Homo sapiens

<400> 28

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Pro | Leu | Leu | Gly | Leu | Leu | Leu | Val | Phe | Ala | Gly | Cys | Thr |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| | | | | | | | | | | | | | | |
| Phe | Ala | Leu | Tyr | Leu | Leu | Ser | Thr | Arg | Leu | Pro | Arg | Gly | Arg | Arg |
| | | | 20 | | | | | | 25 | | | | | 30 |
| | | | | | | | | | | | | | | |
| Leu | Gly | Ser | Thr | Glu | Glu | Ala | Gly | Gly | Arg | Ser | Leu | Trp | Phe | Pro |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ser | Asp | Leu | Ala | Glu | Leu | Arg | Glu | Leu | Ser | Glu | Val | Leu | Arg | Glu | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Tyr | Arg | Lys | Glu | His | Gln | Ala | Tyr | Val | Phe | Leu | Leu | Phe | Cys | Gly | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Ala | Tyr | Leu | Tyr | Lys | Gln | Gly | Phe | Ala | Ile | Pro | Gly | Ser | Ser | Phe | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Leu | Asn | Val | Leu | Ala | Gly | Ala | Leu | Phe | Gly | Pro | Trp | Leu | Gly | Leu | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Leu | Leu | Cys | Cys | Val | Leu | Thr | Ser | Val | Gly | Ala | Thr | Cys | Cys | Tyr | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Leu | Leu | Ser | Ser | Ile | Phe | Gly | Lys | Gln | Leu | Val | Val | Ser | Tyr | Phe | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Pro | Asp | Lys | Val | Ala | Leu | Leu | Gln | Arg | Lys | Val | Glu | Glu | Asn | Arg | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Asn | Ser | Leu | Phe | Phe | Phe | Leu | Leu | Phe | Leu | Arg | Leu | Phe | Pro | Met | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Thr | Pro | Asn | Trp | Phe | Leu | Asn | Leu | Ser | Ala | Pro | Ile | Leu | Asn | Ile | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Pro | Ile | Val | Gln | Phe | Phe | Phe | Ser | Val | Leu | Ile | Gly | Leu | Ile | Pro | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Tyr | Asn | Phe | Ile | Cys | Val | Gln | Thr | Gly | Ser | Ile | Leu | Ser | Thr | Leu | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Thr | Ser | Leu | Asp | Ala | Leu | Phe | Ser | Trp | Asp | Thr | Val | Phe | Lys | Leu | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Leu | Ala | Ile | Ala | Met | Val | Ala | Leu | Ile | Pro | Gly | Thr | Leu | Ile | Lys | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Lys | Phe | Ser | Gln | Lys | His | Leu | Gln | Leu | Asn | Glu | Thr | Ser | Thr | Ala | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Asn | His | Ile | His | Ser | Arg | Lys | Asp | Thr | | | | | | | |
| | | | | 260 | | | | | | | | | | | |

<210> 29

<211> 1292

<212> DNA

<213> Homo sapiens

<400> 29

ccgaggcggg aggagcccgga gggggcgcgga gccccgcatg aatcattgta 50

gtcaatcatt ttccagttct cagccgctca gttgtgatca agggacacgt 100

ggtttccgaa ctgccagctc agaataggaa aataacttgg gattttatat 150

tgggaagacat ggatcttgct gccaacgaga tcagcattta tgacaaactt 200
 tcagagactg ttgatttggt gagacagacc ggccatcagt gtggcatgtc 250
 agagaaggca attgaaaaat ttatcagaca gctgctggaa aagaatgaac 300
 ctgagagacc cccccgcag tatcctctcc ttatagttgt gtataagggt 350
 ctgcaacct tgggattaat cttgctcact gcctactttg tgattcaacc 400
 tttcagccca ttagcacctg agccagtgtt ttctggagct cacacctggc 450
 gctcactcat ccatcacatt aggctgatgt ccttgcccat tgccaagaag 500
 tacatgtcag aaaataaggg agttcctctg catgggggtg atgaagacag 550
 accctttcca gactttgacc cctggtggac aaacgactgt gagcagaatg 600
 agtcagagcc cattcctgcc aactgcactg gctgtgcca gaaacacctg 650
 aaggatgatc tcctggaaga cgccccagg aaatttgaga ggctccatcc 700
 actggtgatc aagacgggaa agccctgtt ggaggaagag attcagcatt 750
 ttttgtgcca gtaccctgag gcgacagaag gcttctctga agggtttttc 800
 gccaaagtggg ggcgctgctt tcctgagcgg tggttcccat ttccttatcc 850
 atggaggaga cctctgaaca gatcacaat gttacgtgag ctttttctg 900
 ttttctca cctgccattt ccaaagatg cctctttaa caagtgtcc 950
 tttcttcacc cagaacctgt tgtggggagt aagatgcata agatgcctga 1000
 cctatttatc attggcagcg gtgaggccat gttgcagctc atccctccct 1050
 tccagtgcg aagacattgt cagtctgtgg ccatgccaat agagccaggg 1100
 gatatcggct atgtcgacac caccactgg aaggctctacg ttatagccag 1150
 aggggtccag ctttgggtca tctgcgatgg aaccgcttcc tcagaactgt 1200
 aggaaataga actgtgcaca ggaacagctt ccagagccga aaaccagggt 1250
 gaaaggggaa aaataaaaac aaaaacgatg aaactgcaa aa 1292

<210> 30

<211> 347

<212> PRT

<213> Homo sapiens

<400> 30

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asp | Leu | Ala | Ala | Asn | Glu | Ile | Ser | Ile | Tyr | Asp | Lys | Leu | Ser |
| 1 | | | | | 5 | | | | 10 | | | | 15 | |

Glu Thr Val Asp Leu Val Arg Gln Thr Gly His Gln Cys Gly Met

| 20 | | | | | 25 | | | | | 30 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Glu | Lys | Ala | Ile | Glu | Lys | Phe | Ile | Arg | Gln | Leu | Leu | Glu | Lys |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Asn | Glu | Pro | Gln | Arg | Pro | Pro | Pro | Gln | Tyr | Pro | Leu | Leu | Ile | Val |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Val | Tyr | Lys | Val | Leu | Ala | Thr | Leu | Gly | Leu | Ile | Leu | Leu | Thr | Ala |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Tyr | Phe | Val | Ile | Gln | Pro | Phe | Ser | Pro | Leu | Ala | Pro | Glu | Pro | Val |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Leu | Ser | Gly | Ala | His | Thr | Trp | Arg | Ser | Leu | Ile | His | His | Ile | Arg |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Leu | Met | Ser | Leu | Pro | Ile | Ala | Lys | Lys | Tyr | Met | Ser | Glu | Asn | Lys |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Gly | Val | Pro | Leu | His | Gly | Gly | Asp | Glu | Asp | Arg | Pro | Phe | Pro | Asp |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Phe | Asp | Pro | Trp | Trp | Thr | Asn | Asp | Cys | Glu | Gln | Asn | Glu | Ser | Glu |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Pro | Ile | Pro | Ala | Asn | Cys | Thr | Gly | Cys | Ala | Gln | Lys | His | Leu | Lys |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Val | Met | Leu | Leu | Glu | Asp | Ala | Pro | Arg | Lys | Phe | Glu | Arg | Leu | His |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Pro | Leu | Val | Ile | Lys | Thr | Gly | Lys | Pro | Leu | Leu | Glu | Glu | Glu | Ile |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Gln | His | Phe | Leu | Cys | Gln | Tyr | Pro | Glu | Ala | Thr | Glu | Gly | Phe | Ser |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Glu | Gly | Phe | Phe | Ala | Lys | Trp | Trp | Arg | Cys | Phe | Pro | Glu | Arg | Trp |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Phe | Pro | Phe | Pro | Tyr | Pro | Trp | Arg | Arg | Pro | Leu | Asn | Arg | Ser | Gln |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Met | Leu | Arg | Glu | Leu | Phe | Pro | Val | Phe | Thr | His | Leu | Pro | Phe | Pro |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Lys | Asp | Ala | Ser | Leu | Asn | Lys | Cys | Ser | Phe | Leu | His | Pro | Glu | Pro |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Val | Val | Gly | Ser | Lys | Met | His | Lys | Met | Pro | Asp | Leu | Phe | Ile | Ile |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Gly | Ser | Gly | Glu | Ala | Met | Leu | Gln | Leu | Ile | Pro | Pro | Phe | Gln | Cys |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Arg | Arg | His | Cys | Gln | Ser | Val | Ala | Met | Pro | Ile | Glu | Pro | Gly | Asp |

| | | | | | |
|-----------------|---------------------|-----------------|---------|--|-----|
| | 305 | | 310 | | 315 |
| Ile Gly Tyr Val | Asp Thr Thr His Trp | Lys Val Tyr Val | Ile Ala | | |
| | 320 | 325 | 330 | | |
| Arg Gly Val Gln | Pro Leu Val Ile Cys | Asp Gly Thr Ala | Phe Ser | | |
| | 335 | 340 | 345 | | |

Glu Leu

<210> 31
 <211> 478
 <212> DNA
 <213> Homo sapiens

<400> 31
 ccacgggtgtc cgttcttcgc ccggcggcag ctgtccccga ggcgggagga 50
 gcccgagggg cgcgagcccc gcatgaatca ttgtagtcaa tcattttcca 100
 gttctcagcc gttcagttgt gatcaaggga cacgtggttt ccgaactgcc 150
 agctcagaat aggaaaataa cttgggattt tatattggaa gacatggatc 200
 ttgctgccaa cgagatcagc atttatgaca aactttcaga gactgttgat 250
 ttggtgagac agaccggcca tcagtgtggc atgtcagaga aggcaattga 300
 aaaatttatc agacagctgc tggaaaagaa tgaacctcag agaccccccc 350
 cgcagtatcc tctccttata gttgtgtata aggttctcgc aaccttggga 400
 ttaatcttgc tactgccta ctttgtgatt caacctttca gccattagc 450
 acctgagcca gtgctttgtg gagctcac 478

<210> 32
 <211> 3531
 <212> DNA
 <213> Homo sapiens

<400> 32
 cccacgcgtc cgccacgcg tccggctgaa cacctcttct ttggagtcag 50
 cactgatga ggcagggtcc cacttgcag ctgcagcagc tgcagcagct 100
 gcagagcgct gctcctggct ggtgccactg gtgcgcacgc tgctagaccg 150
 tgcctatgag ccgctggggc tgcagtgggg actgccctcc ctgccacca 200
 ccaatggcag cccaccttc tttgaagact tccaggcttt ttgtgccaca 250
 cccgaatggc gccacttcat cgacaaacag gtacagccaa ccatgtccca 300
 gttcgaaatg gacacgtatg ctaagagcca cgaccttatg tcaggtttct 350

ggaatgcctg ctatgacatg cttatgagca gtgggcagcg gcgccagtgg 400
gagcgcgccc agagtcgtcg ggccttccag gagctggtgc tggaacctgc 450
gcagaggcgg gcgcgcctgg aggggctacg ctacacggca gtgctgaagc 500
agcaggcaac gcagcactcc atggccctgc tgcactgggg ggcgctgtgg 550
cgccagctcg ccagcccatg tggggcctgg gcgctgaggg aactcccat 600
cccccgctgg aaactgtcca gcgccgagac atattcacgc atgcgtctga 650
agctggtgcc caaccatcac ttcgaccctc acctggaagc cagcgctctc 700
cgagacaatc tgggtgaggt tcccctgaca cccaccgagg aggcctcact 750
gcctctggca gtgaccaaag aggccaaagt gagcaccca cccgagttgc 800
tgcaggagga ccagctcggc gaggacgagc tggctgagct ggagaccccg 850
atggaggcag cagaactgga tgagcagcgt gagaagctgg tgcgtcggc 900
cgagtgccag ctggtgacgg tagtggccgt ggtcccaggg ctgctggagg 950
tcaccacaca gaatgtatac ttctacgatg gcagcactga gcgcgtggaa 1000
accgaggagg gcatcggcta tgatttccgg cggccactgg cccagctgcg 1050
tgaggccac ctgcggcgtt tcaacctgcg ccgttcagca cttgagctct 1100
tctttatcga tcaggccaac tacttcctca acttcccatg caagggtggc 1150
acgaccccag tctcatctcc tagccagact ccgagacccc agcctggccc 1200
catcccacc cataccagg tacggaacca ggtgtactcg tggctcctgc 1250
gcctacggcc cccctctcaa ggctacctaa gcagccgctc ccccaggag 1300
atgctgcgtg cctcaggcct taccagaaa tgggtacagc gtgagatata 1350
caacttcgag tacttgatgc aactcaacac cattgcgggg cggacctaca 1400
atgacctgtc tcagtaccct gtgttccctt gggtcctgca ggactacgtg 1450
tccccaaccc tggacctcag caaccagcc gtcttcggg acctgtctaa 1500
gcccatcggg gtgggtgaacc ccaagcatgc ccagctcgtg agggagaagt 1550
atgaaagctt tgaggacca gcagggacca ttgacaagtt ccactatggc 1600
accactact ccaatgcagc aggcgtgatg cactacctca tccgcgtgga 1650
gcccttcacc tccctgcacg tccagctgca aagtggccgc tttgactgct 1700
ccgaccggca gttccactcg gtggcggcag cctggcaggc acgcctggag 1750
agccctgccg atgtgaagga gtcaccccg gaattcttct actttcctga 1800

cttcctggag aaccagaacg gttttgacct gggctgtctc cagctgacca 1850
acgagaaggt aggcgatgtg gtgctacccc cgtgggccag ctctcctgag 1900
gacttcatcc agcagcaccg ccaggctctg gagtcggagt atgtgtctgc 1950
acacctacac gagtggatcg acctatctt tggctacaag cagcgggggc 2000
cagccgccga ggaggccctc aatgtcttct attactgcac ctatgagggg 2050
gctgtagacc tggaccatgt gacagatgag cgggaacgga aggctctgga 2100
gggcattatc agcaactttg ggcagactcc ctgtcagctg ctgaaggagc 2150
cacatccaac tcggctctca gctgaggaag cagcccatcg ccttgcacgc 2200
ctggacacta actcacctag catcttccag cacctggacg aactcaaggc 2250
attcttcgca gaggtgactg tgagtgccag tgggctgctg ggcaccaca 2300
gctggttgcc ctatgaccgc aacataagca actacttcag cttcagcaaa 2350
gaccccacca tgggcagcca caagacgcag cgactgctga gtggcccgtg 2400
ggtgccaggc agtgggtgtga gtggacaagc actggcagtg gccccggatg 2450
gaaagctgct attcagcggg gccactggg atggcagcct gcgggtgact 2500
gcactacccc gtggcaagct gttgagccag ctgagctgcc accttgatgt 2550
agtaacctgc cttgactgg acacctgtgg catctacctc atctcaggct 2600
cccggaacac cacgtgcatg gtgtggcggc tcctgcatca ggggtggtctg 2650
tcagtaggcc tggcaccaaa gcctgtgcag gtccctgtatg ggcattggggc 2700
tgcagtgagc tgtgtggcca tcagcactga acttgacatg gctgtgtctg 2750
gatctgagga tggaaactgtg atcatacaca ctgtacgccg cggacagttt 2800
gtagcggcac tacggcctct gggtgccaca ttccctggac ctattttcca 2850
cctggcattg gggccgaag gccagattgt ggtacagagc tcagcgtggg 2900
aacgtcctgg ggcccaggtc acctactcct tgcacctgta ttcagtcaat 2950
gggaagtgtc gggcttcact gccctggca gagcagccta cagccctgac 3000
ggtgacagag gactttgtgt tgctgggcac cgcccagtgcc gccctgcaca 3050
tcctccaact aaacacactg ctcccggccg cgccctccctt gcccatgaag 3100
gtggccatcc gcagcgtggc cgtgaccaag gagcgcagcc acgtgctggt 3150
gggcctggag gatggcaagc tcatcgtggt ggtcgcgggg cagccctctg 3200

aggtgcgcag cagccagttc gcgcggaagc tgtggcggtc ctcgcggcgc 3250
 atctcccagg tgtcctcggg agagacggaa tacaacccta ctgaggcgcg 3300
 ctgaacctgg ccagtccggc tgctcggggc ccgccccggg caggcctggc 3350
 ccgggaggcc ccgcccagaa gtcggcgga acaccccggt gtgggcagcc 3400
 caggggggtga gcggggccca ccctgcccag ctcagggatt ggcgggcgat 3450
 gttaccccct cagggattgg cgggcggaag tccgcgccct cgccggctga 3500
 ggggcccggc tgagggccag cactggcgtc t 3531

<210> 33

<211> 1003

<212> PRT

<213> Homo sapiens

<400> 33

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ser | Gln | Phe | Glu | Met | Asp | Thr | Tyr | Ala | Lys | Ser | His | Asp | Leu | 1 | 5 | 10 | 15 |
| Met | Ser | Gly | Phe | Trp | Asn | Ala | Cys | Tyr | Asp | Met | Leu | Met | Ser | Ser | 20 | 25 | 30 | |
| Gly | Gln | Arg | Arg | Gln | Trp | Glu | Arg | Ala | Gln | Ser | Arg | Arg | Ala | Phe | 35 | 40 | 45 | |
| Gln | Glu | Leu | Val | Leu | Glu | Pro | Ala | Gln | Arg | Arg | Ala | Arg | Leu | Glu | 50 | 55 | 60 | |
| Gly | Leu | Arg | Tyr | Thr | Ala | Val | Leu | Lys | Gln | Gln | Ala | Thr | Gln | His | 65 | 70 | 75 | |
| Ser | Met | Ala | Leu | Leu | His | Trp | Gly | Ala | Leu | Trp | Arg | Gln | Leu | Ala | 80 | 85 | 90 | |
| Ser | Pro | Cys | Gly | Ala | Trp | Ala | Leu | Arg | Asp | Thr | Pro | Ile | Pro | Arg | 95 | 100 | 105 | |
| Trp | Lys | Leu | Ser | Ser | Ala | Glu | Thr | Tyr | Ser | Arg | Met | Arg | Leu | Lys | 110 | 115 | 120 | |
| Leu | Val | Pro | Asn | His | His | Phe | Asp | Pro | His | Leu | Glu | Ala | Ser | Ala | 125 | 130 | 135 | |
| Leu | Arg | Asp | Asn | Leu | Gly | Glu | Val | Pro | Leu | Thr | Pro | Thr | Glu | Glu | 140 | 145 | 150 | |
| Ala | Ser | Leu | Pro | Leu | Ala | Val | Thr | Lys | Glu | Ala | Lys | Val | Ser | Thr | 155 | 160 | 165 | |
| Pro | Pro | Glu | Leu | Leu | Gln | Glu | Asp | Gln | Leu | Gly | Glu | Asp | Glu | Leu | 170 | 175 | 180 | |
| Ala | Glu | Leu | Glu | Thr | Pro | Met | Glu | Ala | Ala | Glu | Leu | Asp | Glu | Gln | | | | |

| 185 | 190 | 195 |
|-------------------------------------|-------------------------|-----|
| Arg Glu Lys Leu Val Leu Ser Ala Glu | Cys Gln Leu Val Thr Val | |
| 200 | 205 | 210 |
| Val Ala Val Val Pro Gly Leu Leu Glu | Val Thr Thr Gln Asn Val | |
| 215 | 220 | 225 |
| Tyr Phe Tyr Asp Gly Ser Thr Glu Arg | Val Glu Thr Glu Glu Gly | |
| 230 | 235 | 240 |
| Ile Gly Tyr Asp Phe Arg Arg Pro Leu | Ala Gln Leu Arg Glu Val | |
| 245 | 250 | 255 |
| His Leu Arg Arg Phe Asn Leu Arg Arg | Ser Ala Leu Glu Leu Phe | |
| 260 | 265 | 270 |
| Phe Ile Asp Gln Ala Asn Tyr Phe Leu | Asn Phe Pro Cys Lys Val | |
| 275 | 280 | 285 |
| Gly Thr Thr Pro Val Ser Ser Pro Ser | Gln Thr Pro Arg Pro Gln | |
| 290 | 295 | 300 |
| Pro Gly Pro Ile Pro Pro His Thr Gln | Val Arg Asn Gln Val Tyr | |
| 305 | 310 | 315 |
| Ser Trp Leu Leu Arg Leu Arg Pro Pro | Ser Gln Gly Tyr Leu Ser | |
| 320 | 325 | 330 |
| Ser Arg Ser Pro Gln Glu Met Leu Arg | Ala Ser Gly Leu Thr Gln | |
| 335 | 340 | 345 |
| Lys Trp Val Gln Arg Glu Ile Ser Asn | Phe Glu Tyr Leu Met Gln | |
| 350 | 355 | 360 |
| Leu Asn Thr Ile Ala Gly Arg Thr Tyr | Asn Asp Leu Ser Gln Tyr | |
| 365 | 370 | 375 |
| Pro Val Phe Pro Trp Val Leu Gln Asp | Tyr Val Ser Pro Thr Leu | |
| 380 | 385 | 390 |
| Asp Leu Ser Asn Pro Ala Val Phe Arg | Asp Leu Ser Lys Pro Ile | |
| 395 | 400 | 405 |
| Gly Val Val Asn Pro Lys His Ala Gln | Leu Val Arg Glu Lys Tyr | |
| 410 | 415 | 420 |
| Glu Ser Phe Glu Asp Pro Ala Gly Thr | Ile Asp Lys Phe His Tyr | |
| 425 | 430 | 435 |
| Gly Thr His Tyr Ser Asn Ala Ala Gly | Val Met His Tyr Leu Ile | |
| 440 | 445 | 450 |
| Arg Val Glu Pro Phe Thr Ser Leu His | Val Gln Leu Gln Ser Gly | |
| 455 | 460 | 465 |
| Arg Phe Asp Cys Ser Asp Arg Gln Phe | His Ser Val Ala Ala Ala | |

| 470 | | | | | | | | | | 475 | | | | | 480 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Trp | Gln | Ala | Arg | Leu | Glu | Ser | Pro | Ala | Asp | Val | Lys | Glu | Leu | Ile | | | | | |
| | | | | 485 | | | | | 490 | | | | | 495 | | | | | |
| Pro | Glu | Phe | Phe | Tyr | Phe | Pro | Asp | Phe | Leu | Glu | Asn | Gln | Asn | Gly | | | | | |
| | | | | 500 | | | | | 505 | | | | | 510 | | | | | |
| Phe | Asp | Leu | Gly | Cys | Leu | Gln | Leu | Thr | Asn | Glu | Lys | Val | Gly | Asp | | | | | |
| | | | | 515 | | | | | 520 | | | | | 525 | | | | | |
| Val | Val | Leu | Pro | Pro | Trp | Ala | Ser | Ser | Pro | Glu | Asp | Phe | Ile | Gln | | | | | |
| | | | | 530 | | | | | 535 | | | | | 540 | | | | | |
| Gln | His | Arg | Gln | Ala | Leu | Glu | Ser | Glu | Tyr | Val | Ser | Ala | His | Leu | | | | | |
| | | | | 545 | | | | | 550 | | | | | 555 | | | | | |
| His | Glu | Trp | Ile | Asp | Leu | Ile | Phe | Gly | Tyr | Lys | Gln | Arg | Gly | Pro | | | | | |
| | | | | 560 | | | | | 565 | | | | | 570 | | | | | |
| Ala | Ala | Glu | Glu | Ala | Leu | Asn | Val | Phe | Tyr | Tyr | Cys | Thr | Tyr | Glu | | | | | |
| | | | | 575 | | | | | 580 | | | | | 585 | | | | | |
| Gly | Ala | Val | Asp | Leu | Asp | His | Val | Thr | Asp | Glu | Arg | Glu | Arg | Lys | | | | | |
| | | | | 590 | | | | | 595 | | | | | 600 | | | | | |
| Ala | Leu | Glu | Gly | Ile | Ile | Ser | Asn | Phe | Gly | Gln | Thr | Pro | Cys | Gln | | | | | |
| | | | | 605 | | | | | 610 | | | | | 615 | | | | | |
| Leu | Leu | Lys | Glu | Pro | His | Pro | Thr | Arg | Leu | Ser | Ala | Glu | Glu | Ala | | | | | |
| | | | | 620 | | | | | 625 | | | | | 630 | | | | | |
| Ala | His | Arg | Leu | Ala | Arg | Leu | Asp | Thr | Asn | Ser | Pro | Ser | Ile | Phe | | | | | |
| | | | | 635 | | | | | 640 | | | | | 645 | | | | | |
| Gln | His | Leu | Asp | Glu | Leu | Lys | Ala | Phe | Phe | Ala | Glu | Val | Thr | Val | | | | | |
| | | | | 650 | | | | | 655 | | | | | 660 | | | | | |
| Ser | Ala | Ser | Gly | Leu | Leu | Gly | Thr | His | Ser | Trp | Leu | Pro | Tyr | Asp | | | | | |
| | | | | 665 | | | | | 670 | | | | | 675 | | | | | |
| Arg | Asn | Ile | Ser | Asn | Tyr | Phe | Ser | Phe | Ser | Lys | Asp | Pro | Thr | Met | | | | | |
| | | | | 680 | | | | | 685 | | | | | 690 | | | | | |
| Gly | Ser | His | Lys | Thr | Gln | Arg | Leu | Leu | Ser | Gly | Pro | Trp | Val | Pro | | | | | |
| | | | | 695 | | | | | 700 | | | | | 705 | | | | | |
| Gly | Ser | Gly | Val | Ser | Gly | Gln | Ala | Leu | Ala | Val | Ala | Pro | Asp | Gly | | | | | |
| | | | | 710 | | | | | 715 | | | | | 720 | | | | | |
| Lys | Leu | Leu | Phe | Ser | Gly | Gly | His | Trp | Asp | Gly | Ser | Leu | Arg | Val | | | | | |
| | | | | 725 | | | | | 730 | | | | | 735 | | | | | |
| Thr | Ala | Leu | Pro | Arg | Gly | Lys | Leu | Leu | Ser | Gln | Leu | Ser | Cys | His | | | | | |
| | | | | 740 | | | | | 745 | | | | | 750 | | | | | |
| Leu | Asp | Val | Val | Thr | Cys | Leu | Ala | Leu | Asp | Thr | Cys | Gly | Ile | Tyr | | | | | |

| 755 | | | | | 760 | | | | | 765 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|
| Leu | Ile | Ser | Gly | Ser | Arg | Asp | Thr | Thr | Cys | Met | Val | Trp | Arg | Leu |
| | | | | 770 | | | | | 775 | | | | | 780 |
| Leu | His | Gln | Gly | Gly | Leu | Ser | Val | Gly | Leu | Ala | Pro | Lys | Pro | Val |
| | | | | 785 | | | | | 790 | | | | | 795 |
| Gln | Val | Leu | Tyr | Gly | His | Gly | Ala | Ala | Val | Ser | Cys | Val | Ala | Ile |
| | | | | 800 | | | | | 805 | | | | | 810 |
| Ser | Thr | Glu | Leu | Asp | Met | Ala | Val | Ser | Gly | Ser | Glu | Asp | Gly | Thr |
| | | | | 815 | | | | | 820 | | | | | 825 |
| Val | Ile | Ile | His | Thr | Val | Arg | Arg | Gly | Gln | Phe | Val | Ala | Ala | Leu |
| | | | | 830 | | | | | 835 | | | | | 840 |
| Arg | Pro | Leu | Gly | Ala | Thr | Phe | Pro | Gly | Pro | Ile | Phe | His | Leu | Ala |
| | | | | 845 | | | | | 850 | | | | | 855 |
| Leu | Gly | Ser | Glu | Gly | Gln | Ile | Val | Val | Gln | Ser | Ser | Ala | Trp | Glu |
| | | | | 860 | | | | | 865 | | | | | 870 |
| Arg | Pro | Gly | Ala | Gln | Val | Thr | Tyr | Ser | Leu | His | Leu | Tyr | Ser | Val |
| | | | | 875 | | | | | 880 | | | | | 885 |
| Asn | Gly | Lys | Leu | Arg | Ala | Ser | Leu | Pro | Leu | Ala | Glu | Gln | Pro | Thr |
| | | | | 890 | | | | | 895 | | | | | 900 |
| Ala | Leu | Thr | Val | Thr | Glu | Asp | Phe | Val | Leu | Leu | Gly | Thr | Ala | Gln |
| | | | | 905 | | | | | 910 | | | | | 915 |
| Cys | Ala | Leu | His | Ile | Leu | Gln | Leu | Asn | Thr | Leu | Leu | Pro | Ala | Ala |
| | | | | 920 | | | | | 925 | | | | | 930 |
| Pro | Pro | Leu | Pro | Met | Lys | Val | Ala | Ile | Arg | Ser | Val | Ala | Val | Thr |
| | | | | 935 | | | | | 940 | | | | | 945 |
| Lys | Glu | Arg | Ser | His | Val | Leu | Val | Gly | Leu | Glu | Asp | Gly | Lys | Leu |
| | | | | 950 | | | | | 955 | | | | | 960 |
| Ile | Val | Val | Val | Ala | Gly | Gln | Pro | Ser | Glu | Val | Arg | Ser | Ser | Gln |
| | | | | 965 | | | | | 970 | | | | | 975 |
| Phe | Ala | Arg | Lys | Leu | Trp | Arg | Ser | Ser | Arg | Arg | Ile | Ser | Gln | Val |
| | | | | 980 | | | | | 985 | | | | | 990 |
| Ser | Ser | Gly | Glu | Thr | Glu | Tyr | Asn | Pro | Thr | Glu | Ala | Arg | | |
| | | | | 995 | | | | | 1000 | | | | | |

<210> 34

<211> 43

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 34

tgactgcact accccgtggc aagctgttga gccagctcag ctg 43

<210> 35

<211> 1395

<212> DNA

<213> Homo sapiens

<400> 35

cggacgcgtg ggcggacgcg tgggggctgt gagaaagtgc caataaatac 50
atcatgcaac cccacggccc accttgtgaa ctctctgtgc ccagggtga 100
tgtgctctt ccagggtac tcattccaaag gcctaattca acgttctgtc 150
ttcaatctgc aaatctatgg ggtcctgggg ctcttctgga cccttaactg 200
ggtactggcc ctgggccaat gcgtcctcgc tggagccttt gcctccttct 250
actgggcctt ccacaagccc caggacatcc ctaccttccc cttaatctct 300
gccttcatcc gcacactccg ttaccacact gggtcattgg catttgagac 350
ctcatcctg acccttgtgc agatagcccc ggtcatcttg gagtatattg 400
accacaagct cagaggagtg cagaaccctg tagcccgctg catcatgtgc 450
tgtttcaagt gctgcctctg gtgtctggaa aaatttatca agttcctaaa 500
ccgcaatgca tacatcatga tcgccatcta cgggaagaat ttctgtgtct 550
cagccaaaaa tgcgttcatg ctactcatgc gaaacattgt cagggtgggc 600
gtcctggaca aagtcacaga cctgctgctg ttctttggga agctgctggc 650
ggtcggaggc gtgggggtcc tgtccttctt ttttttctcc ggtcgcattc 700
cggggctggg taaagacttt aagagcccc acctcaacta ttactggctg 750
cccatcatga cctccatcct gggggcctat gtcattcgca gcggcttctt 800
cagcgttttc ggcatgtgtg tggacacgct ctctctctgc ttcttggaa 850
acctggagcg gaacaacggc tccctggacc ggcctacta catgtccaag 900
agccttctaa agattctggg caagaagaac gaggcgcccc cggacaacaa 950
gaagaggaag aagtgcagc tccggccctg atccaggact gcaccccacc 1000
cccaccgtcc agccatccaa cctcacttcg ccttacaggt ctccattttg 1050
tggtaaaaaa aggttttagg ccaggcgccg tggctcacgc ctgtaattca 1100
acactttgag aggctgaggc gggcggatca cctgagtcag gagttcgaga 1150
ccagcctggc caacatggtg aaacctccgt ctctattaaa aatacaaaaa 1200

ttagccgaga gtggtggcat gcacctgtca tcccagctac tcgggaggct 1250
 gaggcaggag aatcgcttga acccgggagg cagaggttgc agtgagccga 1300
 gatcgcgcca ctgcactcca acctgggtga cagactctgt ctccaaaaca 1350
 aaacaaacaa acaaaaagat tttattaaag atattttgtt aactc 1395

<210> 36
 <211> 321
 <212> PRT
 <213> Homo sapiens

<400> 36
 Arg Thr Arg Gly Arg Thr Arg Gly Gly Cys Glu Lys Val Pro Ile
 1 5 10 15
 Asn Thr Ser Cys Asn Pro Thr Ala His Leu Val Asn Ser Ser Cys
 20 25 30
 Pro Gly Leu Met Cys Val Phe Gln Gly Tyr Ser Ser Lys Gly Leu
 35 40 45
 Ile Gln Arg Ser Val Phe Asn Leu Gln Ile Tyr Gly Val Leu Gly
 50 55 60
 Leu Phe Trp Thr Leu Asn Trp Val Leu Ala Leu Gly Gln Cys Val
 65 70 75
 Leu Ala Gly Ala Phe Ala Ser Phe Tyr Trp Ala Phe His Lys Pro
 80 85 90
 Gln Asp Ile Pro Thr Phe Pro Leu Ile Ser Ala Phe Ile Arg Thr
 95 100 105
 Leu Arg Tyr His Thr Gly Ser Leu Ala Phe Gly Ala Leu Ile Leu
 110 115 120
 Thr Leu Val Gln Ile Ala Arg Val Ile Leu Glu Tyr Ile Asp His
 125 130 135
 Lys Leu Arg Gly Val Gln Asn Pro Val Ala Arg Cys Ile Met Cys
 140 145 150
 Cys Phe Lys Cys Cys Leu Trp Cys Leu Glu Lys Phe Ile Lys Phe
 155 160 165
 Leu Asn Arg Asn Ala Tyr Ile Met Ile Ala Ile Tyr Gly Lys Asn
 170 175 180
 Phe Cys Val Ser Ala Lys Asn Ala Phe Met Leu Leu Met Arg Asn
 185 190 195
 Ile Val Arg Val Val Val Leu Asp Lys Val Thr Asp Leu Leu Leu
 200 205 210

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Phe | Gly | Lys | Leu | Leu | Val | Val | Gly | Gly | Val | Gly | Val | Leu | Ser | 215 | 220 | 225 |
| Phe | Phe | Phe | Phe | Ser | Gly | Arg | Ile | Pro | Gly | Leu | Gly | Lys | Asp | Phe | 230 | 235 | 240 |
| Lys | Ser | Pro | His | Leu | Asn | Tyr | Tyr | Trp | Leu | Pro | Ile | Met | Thr | Ser | 245 | 250 | 255 |
| Ile | Leu | Gly | Ala | Tyr | Val | Ile | Ala | Ser | Gly | Phe | Phe | Ser | Val | Phe | 260 | 265 | 270 |
| Gly | Met | Cys | Val | Asp | Thr | Leu | Phe | Leu | Cys | Phe | Leu | Glu | Asp | Leu | 275 | 280 | 285 |
| Glu | Arg | Asn | Asn | Gly | Ser | Leu | Asp | Arg | Pro | Tyr | Tyr | Met | Ser | Lys | 290 | 295 | 300 |
| Ser | Leu | Leu | Lys | Ile | Leu | Gly | Lys | Lys | Asn | Glu | Ala | Pro | Pro | Asp | 305 | 310 | 315 |
| Asn | Lys | Lys | Arg | Lys | Lys | | | | | | | | | | 320 | | |

<210> 37
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 37
 tcgtgccag gggctgatgt gc 22

<210> 38
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 38
 gtctttaccc agccccggga tgcg 24

<210> 39
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 39
 ggccaatcc aacgttctgt cttcaatctg caaatctatg gggtcctggg 50

<210> 40
<211> 1365
<212> DNA
<213> Homo sapiens

<400> 40
gagtcttgac cgccgccggg ctcttggtac ctcagcgga gcgccaggcg 50
tccggccgcc gtggctatgt tcgtgtccga tttccgcaa gagttctacg 100
agggtgtcca gagccagagg gtccttctct tcgtggcctc ggacgtggat 150
gctctgtgtg cgtgcaagat ccttcaggcc ttgttccagt gtgaccacgt 200
gcaatatacg ctggttccag tttctgggtg gcaagaactt gaaactgcat 250
ttcttgagca taaagaacag tttcattatt ttatttctcat aaactgtgga 300
gctaattgag acctattgga tattcttcaa cctgatgaag aactatatt 350
ctttgtgtgt gactccata ggccagtcaa tgctgtcaat gtatacaacg 400
ataccagat caaattactc attaaacaag atgatgacct tgaagttccc 450
gcctatgaag acatcttcag ggatgaagag gaggatgaag agcattcagg 500
aatgacagt gatgggtcag agccttctga gaagcgaca cggttagaag 550
aggagatagt ggagcaaacc atgcggagga ggcagcggcg agagtgggag 600
gcccggagaa gagacatcct ctttgactac gagcagtatg aatatcatgg 650
gacatcgtca gccatggtga tgtttgagct ggcttggatg ctgtccaagg 700
acctgaatga catgctgtgg tgggccatcg ttggactaac agaccagtgg 750
gtgcaagaca agatcactca aatgaaatac gtgactgatg ttggtgtcct 800
gcagcgccac gtttcccgcc acaaccaccg gaacgaggat gaggagaaca 850
cactctccgt ggactgcaca cggatctcct ttgagtatga cctccgcctg 900
gtgctctacc agcactggtc cctccatgac agcctgtgca acaccagcta 950
taccgcagcc aggttcaagc tgtggtctgt gcatggacag aagcggctcc 1000
aggagtccct tgcagacatg ggtcttcccc tgaagcaggt gaagcagaag 1050
ttccaggcca tggacatctc cttgaaggag aatttgcgga aatgattga 1100
agagtctgca aataaatttg ggatgaagga catgcgcgtg cagactttca 1150
gcattcattt tgggttcaag cacaagtctc tggccagcga cgtggtcttt 1200
gccaccatgt ctttgatgga gagccccgag aaggatggct caggacaga 1250
tcacttcata caggctctgg acagcctctc caggagtaac ctggacaagc 1300

tgtaccatgg cctggaactc gccaagaagc agctgcgagc caccagcag 1350

accattgccca gctgc 1365

<210> 41

<211> 566

<212> PRT

<213> Homo sapiens

<400> 41

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Phe | Val | Ser | Asp | Phe | Arg | Lys | Glu | Phe | Tyr | Glu | Val | Val | Gln |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gln | Arg | Val | Leu | Leu | Phe | Val | Ala | Ser | Asp | Val | Asp | Ala | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Ala | Cys | Lys | Ile | Leu | Gln | Ala | Leu | Phe | Gln | Cys | Asp | His | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Tyr | Thr | Leu | Val | Pro | Val | Ser | Gly | Trp | Gln | Glu | Leu | Glu | Thr |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Phe | Leu | Glu | His | Lys | Glu | Gln | Phe | His | Tyr | Phe | Ile | Leu | Ile |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Cys | Gly | Ala | Asn | Val | Asp | Leu | Leu | Asp | Ile | Leu | Gln | Pro | Asp |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Asp | Thr | Ile | Phe | Phe | Val | Cys | Asp | Ser | His | Arg | Pro | Val | Asn |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Val | Asn | Val | Tyr | Asn | Asp | Thr | Gln | Ile | Lys | Leu | Leu | Ile | Lys |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Asp | Asp | Asp | Leu | Glu | Val | Pro | Ala | Tyr | Glu | Asp | Ile | Phe | Arg |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Glu | Glu | Glu | Asp | Glu | Glu | His | Ser | Gly | Asn | Asp | Ser | Asp | Gly |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Glu | Pro | Ser | Glu | Lys | Arg | Thr | Arg | Leu | Glu | Glu | Glu | Ile | Val |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Gln | Thr | Met | Arg | Arg | Arg | Gln | Arg | Arg | Glu | Trp | Glu | Ala | Arg |
| | | | | 170 | | | | | 175 | | | | | 180 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Arg | Asp | Ile | Leu | Phe | Asp | Tyr | Glu | Gln | Tyr | Glu | Tyr | His | Gly |
| | | | | 185 | | | | | 190 | | | | | 195 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Ser | Ser | Ala | Met | Val | Met | Phe | Glu | Leu | Ala | Trp | Met | Leu | Ser |
| | | | | 200 | | | | | 205 | | | | | 210 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Asp | Leu | Asn | Asp | Met | Leu | Trp | Trp | Ala | Ile | Val | Gly | Leu | Thr |
| | | | | 215 | | | | | 220 | | | | | 225 |

Asp Gln Trp Val Gln Asp Lys Ile Thr Gln Met Lys Tyr Val Thr

| 230 | | | | | | | | | | 235 | | | | | 240 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Asp | Val | Gly | Val | Leu | Gln | Arg | His | Val | Ser | Arg | His | Asn | His | Arg | | | | | |
| 245 | | | | | | | | | | 250 | | | | | 255 | | | | |
| Asn | Glu | Asp | Glu | Glu | Asn | Thr | Leu | Ser | Val | Asp | Cys | Thr | Arg | Ile | | | | | |
| 260 | | | | | | | | | | 265 | | | | | 270 | | | | |
| Ser | Phe | Glu | Tyr | Asp | Leu | Arg | Leu | Val | Leu | Tyr | Gln | His | Trp | Ser | | | | | |
| 275 | | | | | | | | | | 280 | | | | | 285 | | | | |
| Leu | His | Asp | Ser | Leu | Cys | Asn | Thr | Ser | Tyr | Thr | Ala | Ala | Arg | Phe | | | | | |
| 290 | | | | | | | | | | 295 | | | | | 300 | | | | |
| Lys | Leu | Trp | Ser | Val | His | Gly | Gln | Lys | Arg | Leu | Gln | Glu | Phe | Leu | | | | | |
| 305 | | | | | | | | | | 310 | | | | | 315 | | | | |
| Ala | Asp | Met | Gly | Leu | Pro | Leu | Lys | Gln | Val | Lys | Gln | Lys | Phe | Gln | | | | | |
| 320 | | | | | | | | | | 325 | | | | | 330 | | | | |
| Ala | Met | Asp | Ile | Ser | Leu | Lys | Glu | Asn | Leu | Arg | Glu | Met | Ile | Glu | | | | | |
| 335 | | | | | | | | | | 340 | | | | | 345 | | | | |
| Glu | Ser | Ala | Asn | Lys | Phe | Gly | Met | Lys | Asp | Met | Arg | Val | Gln | Thr | | | | | |
| 350 | | | | | | | | | | 355 | | | | | 360 | | | | |
| Phe | Ser | Ile | His | Phe | Gly | Phe | Lys | His | Lys | Phe | Leu | Ala | Ser | Asp | | | | | |
| 365 | | | | | | | | | | 370 | | | | | 375 | | | | |
| Val | Val | Phe | Ala | Thr | Met | Ser | Leu | Met | Glu | Ser | Pro | Glu | Lys | Asp | | | | | |
| 380 | | | | | | | | | | 385 | | | | | 390 | | | | |
| Gly | Ser | Gly | Thr | Asp | His | Phe | Ile | Gln | Ala | Leu | Asp | Ser | Leu | Ser | | | | | |
| 395 | | | | | | | | | | 400 | | | | | 405 | | | | |
| Arg | Ser | Asn | Leu | Asp | Lys | Leu | Tyr | His | Gly | Leu | Glu | Leu | Ala | Lys | | | | | |
| 410 | | | | | | | | | | 415 | | | | | 420 | | | | |
| Lys | Gln | Leu | Arg | Ala | Thr | Gln | Gln | Thr | Ile | Ala | Ser | Cys | Leu | Cys | | | | | |
| 425 | | | | | | | | | | 430 | | | | | 435 | | | | |
| Thr | Asn | Leu | Val | Ile | Ser | Gln | Gly | Pro | Phe | Leu | Tyr | Cys | Ser | Leu | | | | | |
| 440 | | | | | | | | | | 445 | | | | | 450 | | | | |
| Met | Glu | Gly | Thr | Pro | Asp | Val | Met | Leu | Phe | Ser | Arg | Pro | Ala | Ser | | | | | |
| 455 | | | | | | | | | | 460 | | | | | 465 | | | | |
| Leu | Ser | Leu | Leu | Ser | Lys | His | Leu | Leu | Lys | Ser | Phe | Val | Cys | Ser | | | | | |
| 470 | | | | | | | | | | 475 | | | | | 480 | | | | |
| Thr | Lys | Asn | Arg | Arg | Cys | Lys | Leu | Leu | Pro | Leu | Val | Met | Ala | Ala | | | | | |
| 485 | | | | | | | | | | 490 | | | | | 495 | | | | |
| Pro | Leu | Ser | Met | Glu | His | Gly | Thr | Val | Thr | Val | Val | Gly | Ile | Pro | | | | | |
| 500 | | | | | | | | | | 505 | | | | | 510 | | | | |
| Pro | Glu | Thr | Asp | Ser | Ser | Asp | Arg | Lys | Asn | Phe | Phe | Gly | Arg | Ala | | | | | |

| | | |
|---|-----|-----|
| 515 | 520 | 525 |
| Phe Glu Lys Ala Ala Glu Ser Thr Ser Ser Arg Met Leu His Asn | | |
| 530 | 535 | 540 |
| His Phe Asp Leu Ser Val Ile Glu Leu Lys Ala Glu Asp Arg Ser | | |
| 545 | 550 | 555 |
| Lys Phe Leu Asp Ala Leu Ile Ser Leu Leu Ser | | |
| 560 | 565 | |

<210> 42
 <211> 380
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 44, 118, 172, 183
 <223> unknown base

<400> 42
 gtacctcagc gcgagcgcca ggcgtccggc cgccgtggct atgntcgtgt 50
 ccgatttccg caaagagttc tacgaggtgg tccagagcca gagggtcctt 100
 ctcttcgtgg cctcggangt ggatgctctg tgtgcbtgca agatccttca 150
 ggccttggtc cagtgtgacc angtgcaata tangctgggt ccagtttctg 200
 ggtggcaaga acttgaaact gcatttcttg agcataaaga acagtttcat 250
 tattttattc tcataaactg tggagctaata gtagacctat tggatattct 300
 tcaacctgat gaagacacta tattctttgt gtgtgacacc cataggccag 350
 tcaatgttgt caatgtatac aacgataccc 380

<210> 43
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 43
 ttccgcaaag agttctacga ggtgg 25

<210> 44
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 44
attgacaaca ttgactggcc tatggg 26

<210> 45
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 45
gtggatgctc tgtgtgctg caagatcctt caggccttgt tccagtgtga 50

<210> 46
<211> 3089
<212> DNA
<213> Homo sapiens

<400> 46
caggaaccct ctctttgggt ctggattggg acccctttcc agtaccattt 50
tttctagtga accacgaagg gacgatacca gaaaacaccc tcaacccaaa 100
ggaaatagac tacagcccca attggctgac tttggctata gaaaaaagaa 150
aggaacgaaa agagacagtt ttttttggaa agctaagtct tccctttatc 200
gagtcaagaa accccccctt cttgagctat ttacagcttt taacaattga 250
gtaaagtacg ctccggtcac catggtgaca gccgccctgg gtcccgtctg 300
ggcagcgctc ctgctctttc tctgatgtg tgagatccgt atggtggagc 350
tcacctttga cagagctgtg gccagcggct gccaacggtg ctgtgactct 400
gaggaccccc tggatcctgc ccatgtatcc tcagcctctt cctccggccg 450
ccccacgcc ctgcctgaga tcagacccta cattaatata accatcctga 500
agggtgacaa aggggaccca ggcccaatgg gcctgccagg gtacatgggc 550
agggagggtc cccaagggga gcctggccct cagggcagca agggtgacaa 600
gggggagatg ggcagccccg gcgccccgtg ccagaagcgc ttcttcgcct 650
tctcagtggg ccgcaagacg gccctgcaca gcggcgagga cttccagacg 700
ctgctcttcg aaagggtctt tgtgaacctt gatgggtgct ttgacatggc 750
gaccggccag tttgtgctc ccctgcgtgg catctacttc ttcagcctca 800
atgtgcacag ctggaattac aaggagacgt acgtgcacat tatgcataac 850
cagaaagagg ctgtcatcct gtacgcgcag cccagcgagc gcagcatcat 900
gcagagccag agtgtgatgc tggacctggc ctacggggac cgcgtctggg 950

tgcggtcttt caagcgccag cgcgagaacg ccatctacag caacgacttc 1000
gacacctaca tcaccttcag cggccacctc atcaaggccg aggacgactg 1050
agggcctctg ggccaccctc ccggctggag agctcaggtg ctggtcccgt 1100
cccctgcagg gctcagtttg cactgctgtg aagcaggaag gccagggagg 1150
tccccgggga cctggcattc tggggagacc ctgcttctat cttggctgcc 1200
atcatccctc ccagcctatt tctgctctc tcttctctct tggacctatt 1250
ttaagaagct tgctaacct aatattctag aactttccca gcctcgtagc 1300
ccagcacttc tcaaacttgg aaatgcatgc gaatcacccg gggttcgtgt 1350
taaatgcaga ttctgactca gcaggtctga gtgggtccag gattctgtgt 1400
ttctcatatg ttctgggtg atgctgatgg ggtcagtcta tgaaccacac 1450
tggagcaacc aggttctagg actttctcaa tattctagta ctttctgaac 1500
attctggaat cctccccaca ttctagaatt ctccaacat tttttttct 1550
tgagacagag tcttgctctg ttgccaggc tagagtgcag tggtgcaatc 1600
tcagttcact gcaacctctg cctcccgggt tcaagcgatt cttctgcctc 1650
agcctcccta gtggctggga ttacaggcgc ctgctacat gcctggctaa 1700
tttttgtatt tttagtagag atggggtttc accatattgg ccaggctggg 1750
cttgaactcc tgacttcagg tgaccacccc gcctcggcct ctcaaaatgc 1800
tgggattaca ggtgtgagcc accgtgcctg gccaatcca acattcttaa 1850
attctctcat ccctccaggg ctccccgtgc tatgttctct ttacccttc 1900
cccctcttct cttgctcagg cctgcaccac tgcagccacc gttcatttat 1950
tcattcatta aacctgagc actcactctg tgctgggtcc cgggaagggt 2000
gaggggggtca gacacaggcc ctgcccctgc cctcagtgac tggccagtcc 2050
agcccaggcg gggagagatg tgtacatagg ttttaaagca gaccagagc 2100
tcatgggggc ctgtgttctg ggtgttcagg tgctgctggg cctccattac 2150
ccactgctcc ccaaggctgg tgggacgggg tcccgggtggc aggggcaggt 2200
atctccttcc cgttcctcat ccacctgcc agtgctcatc gttacagcaa 2250
accccagggg gccttgcca ggtcaagggt tctgtgagga gaggaccag 2300
gagtgtgggg gcatttgggg ggtgaagtgg ccccgaaga atggaacca 2350

cacccatagc tctccccaca gctgatacgg catcctgcga gaagacctgc 2400
 cctcctcact gggatccctt tctgcctcc tcccagggtc ctgccagggc 2450
 cttgctcagt cccttcacc aaagtcattc gaacttccgt ttccccaggg 2500
 cctccagctg ccctcagaca ctgatgtctg tcccagggtg ctctctgccc 2550
 ctcatgcccc tctcaccggc ccagtgtccc gactctccag gctttatcaa 2600
 ggtgctaagg ccgggtggg cagctcctcg tctcagagcc ctctccggc 2650
 ctggtgctgc ctttacaac acctgcagga gaagggccac ggaagcccca 2700
 ggcttttagag ccctcagcag gtctggggag ctagagcaaa ggagggacct 2750
 caggccttcc gtttcttctt ccagggtggg gtggcctggt gttccctag 2800
 ccttccaaac ccagggtggc tgcccttctc ccagaggga ggcggcctcc 2850
 gccattggt gctcatgcag actctggggc tgagggtgcc cggggggtga 2900
 tctctggtgc tcacagccga gggagccgtg gctccatggc cagatgacgg 2950
 aaacagggtc tgaccaagtg ccaggaagac ctgtgctata aaccacctg 3000
 cctgatcctg ccctgcctg accccgccac gccctgccgt ccagcatgat 3050
 taaagaatgc tgtctcctct tggaaaaaaaa aaaaaaaaaa 3089

<210> 47

<211> 259

<212> PRT

<213> Homo sapiens

<220>

<221> Signal Peptide

<222> 1-20

<223> Signal Peptide

<220>

<221> N-glycosylation Site

<222> 72-75

<223> N-glycosylation Site

<220>

<221> Clq Domain Proteins

<222> 144-178, 78-111, 84-117

<223> Clq Domain Proteins

<400> 47

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Thr | Ala | Ala | Leu | Gly | Pro | Val | Trp | Ala | Ala | Leu | Leu | Leu |
| 1 | | | | | 5 | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Leu | Leu | Met | Cys | Glu | Ile | Arg | Met | Val | Glu | Leu | Thr | Phe | Asp |
| | | | | 20 | | | | | 25 | | | | | 30 |

Arg Ala Val Ala Ser Gly Cys Gln Arg Cys Cys Asp Ser Glu Asp
 35 40 45
 Pro Leu Asp Pro Ala His Val Ser Ser Ala Ser Ser Ser Gly Arg
 50 55 60
 Pro His Ala Leu Pro Glu Ile Arg Pro Tyr Ile Asn Ile Thr Ile
 65 70 75
 Leu Lys Gly Asp Lys Gly Asp Pro Gly Pro Met Gly Leu Pro Gly
 80 85 90
 Tyr Met Gly Arg Glu Gly Pro Gln Gly Glu Pro Gly Pro Gln Gly
 95 100 105
 Ser Lys Gly Asp Lys Gly Glu Met Gly Ser Pro Gly Ala Pro Cys
 110 115 120
 Gln Lys Arg Phe Phe Ala Phe Ser Val Gly Arg Lys Thr Ala Leu
 125 130 135
 His Ser Gly Glu Asp Phe Gln Thr Leu Leu Phe Glu Arg Val Phe
 140 145 150
 Val Asn Leu Asp Gly Cys Phe Asp Met Ala Thr Gly Gln Phe Ala
 155 160 165
 Ala Pro Leu Arg Gly Ile Tyr Phe Phe Ser Leu Asn Val His Ser
 170 175 180
 Trp Asn Tyr Lys Glu Thr Tyr Val His Ile Met His Asn Gln Lys
 185 190 195
 Glu Ala Val Ile Leu Tyr Ala Gln Pro Ser Glu Arg Ser Ile Met
 200 205 210
 Gln Ser Gln Ser Val Met Leu Asp Leu Ala Tyr Gly Asp Arg Val
 215 220 225
 Trp Val Arg Leu Phe Lys Arg Gln Arg Glu Asn Ala Ile Tyr Ser
 230 235 240
 Asn Asp Phe Asp Thr Tyr Ile Thr Phe Ser Gly His Leu Ile Lys
 245 250 255

Ala Glu Asp Asp

<210> 48

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 48

ccagacgctg ctcttcgaaa gggtc 25

<210> 49

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 49

gggtccccgta ggccagggtcc agc 23

<210> 50

<211> 50

<212> DNA

<213> Artificial sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 50

ctacttcttc agcctcaatg tgcacagctg gaattacaag gagacgtacg 50

<210> 51

<211> 2768

<212> DNA

<213> Homo sapiens

<400> 51

actcgaacgc agttgcttcg ggaccagga cccctcggg cccgaccgc 50
caggaaagac tgaggccgcg gcctgcccc cccggctccc tgcgccgcg 100
ccgcctcccc ggacagaaga tgtgctccag ggtccctctg ctgctgccgc 150
tgctcctgct actggccctg gggcctgggg tgcagggctg cccatccggc 200
tgccagtgc gccagccaca gacagtcttc tgcactgcc gccaggggac 250
cacggtgccc cgagacgtgc caccgacac ggtggggctg tacgtctttg 300
agaacggcat caccatgctc gacgcaggca gctttgccgg cctgccgggc 350
ctgcagctcc tggacctgtc acagaaccag atcgccagcc tgcccagcgg 400
ggctctccag cactcgcca acctcagcaa cctggacctg acggccaaca 450
ggctgcatga aatcaccaat gagaccttc gtggcctgcg gcgcctcgag 500
cgctctacc tgggcaagaa ccgcatccgc cacatccagc ctgggtgcctt 550
cgacacgtc gaccgcctcc tggagctcaa gctgcaggac aacgagctgc 600
gggcactgcc cccgtgcgc ctgccccgcc tgctgctgct ggacctcagc 650
cacaacagcc tcctggccct ggagcccggc atcctggaca ctgccaacgt 700

ggaggcgctg cggctggctg gtctggggt gcagcagctg gacgaggggc 750
tcttcagccg cttgcgcaac ctccacgacc tggatgtgtc cgacaaccag 800
ctggagcgag tgccacctgt gatccgaggc ctccggggcc tgacgcgcct 850
gcggctggcc ggcaacaccc gcattgccc gctgcggccc gaggacctgg 900
ccggcctggc tgccctgcag gagctggatg tgagcaacct aagcctgcag 950
gccctgcctg gcgacctctc gggcctcttc ccccgccctg ggctgctggc 1000
agctgcccgc aacccttca actgcgtgtg cccctgagc tggtttggcc 1050
cctgggtgcg cgagagccac gtcacactgg ccagccctga ggagacgcgc 1100
tgccacttcc cgcccaagaa cgctggcccg ctgctcctgg agcttgacta 1150
cgccgacttt ggctgccag ccaccaccac cacagccaca gtgcccacca 1200
cgaggccgt ggtgcgggag cccacagcct tgtcttctag cttggctcct 1250
acctggctta gcccacagc gccggccact gagggcccca gcccgccctc 1300
cactgcccc cagactgtag ggctgtccc ccagccccag gactgcccac 1350
cgtccacctg cctcaatggg ggcacatgcc acctggggac acggcaccac 1400
ctggcgctgt tgtgccccga aggcttcacg ggctgtact gtgagagcca 1450
gatggggcag gggacacggc ccagccctac accagtcacg ccgaggccac 1500
cacggctcct gacctgggc atcgagccgg tgagccccac ctccctgcgc 1550
gtggggctgc agcgctacct ccaggggagc tccgtgcagc tcaggagcct 1600
ccgtctcacc tatcgcaacc tatcggggcc tgataagcgg ctggtgacgc 1650
tgcgactgcc tgctcgctc gctgagtaca cggtcaccca gctgcggccc 1700
aacgccactt actccgtctg tgtcatgcct ttggggcccg ggcgggtgcc 1750
ggagggcgag gaggcctgcg gggaggccca tacaccccca gccgtccact 1800
ccaaccacgc ccagtcacc caggcccgcg agggcaacct gccgtcctc 1850
attgcgccc cctggccgc ggtgctcctg gccgcgctgg ctgcggtggg 1900
ggcagcctac tgtgtgcggc ggggcgggc catggcagca gcggctcagg 1950
acaaagggca ggtggggcca ggggctggg ccctggaact ggagggagt 2000
aaggtcccct tggagccagg cccgaaggca acagaggcg gtggagaggc 2050
cctgccacgc gggctctgagt gtgaggtgcc actcatgggc tccccagggc 2100

ctggcctcca gtcacccctc cacgcaaagc cctacatcta agccagagag 2150
 agacagggca gctggggccg ggctctcagc cagtgagatg gccagcccc 2200
 tctgtgtgcc acaccacgta agttctcagt cccaacctcg gggatgtgtg 2250
 cagacagggc tgtgtgacca cagctgggcc ctgttcctc tggacctcg 2300
 tctcctcatc tgtgagatgc tgtggcccag ctgacgagcc ctaacgtccc 2350
 cagaaccgag tgcctatgag gacagtgtcc gccctgccct ccgcaacgtg 2400
 cagtccttgg gcacggcggg ccctgccatg tgctggtaac gcatgcctgg 2450
 gtctgtgtgg gctctccac tccaggcgga ccctgggggc cagtgaagga 2500
 agtcccgga aagagcagag ggagagcggg taggcggctg tgtgactcta 2550
 gtcttgccc caggaagcga aggaacaaaa gaaactggaa aggaagatgc 2600
 tttaggaaca tgttttgctt ttttaaaata tatatattta taagagatcc 2650
 tttccattt attctgggaa gatgttttcc aaactcagag acaaggactt 2700
 tggtttttgt aagacaaacg atgatatgaa ggccttttgt aagaaaaaat 2750
 aaaagatgaa gtgtgaaa 2768

<210> 52

<211> 673

<212> PRT

<213> Homo sapiens

<400> 52

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Cys | Ser | Arg | Val | Pro | Leu | Leu | Leu | Pro | Leu | Leu | Leu | Leu | Leu | 1 | 5 | 10 | 15 |
| Ala | Leu | Gly | Pro | Gly | Val | Gln | Gly | Cys | Pro | Ser | Gly | Cys | Gln | Cys | 20 | 25 | 30 | |
| Ser | Gln | Pro | Gln | Thr | Val | Phe | Cys | Thr | Ala | Arg | Gln | Gly | Thr | Thr | 35 | 40 | 45 | |
| Val | Pro | Arg | Asp | Val | Pro | Pro | Asp | Thr | Val | Gly | Leu | Tyr | Val | Phe | 50 | 55 | 60 | |
| Glu | Asn | Gly | Ile | Thr | Met | Leu | Asp | Ala | Gly | Ser | Phe | Ala | Gly | Leu | 65 | 70 | 75 | |
| Pro | Gly | Leu | Gln | Leu | Leu | Asp | Leu | Ser | Gln | Asn | Gln | Ile | Ala | Ser | 80 | 85 | 90 | |
| Leu | Pro | Ser | Gly | Val | Phe | Gln | Pro | Leu | Ala | Asn | Leu | Ser | Asn | Leu | 95 | 100 | 105 | |
| Asp | Leu | Thr | Ala | Asn | Arg | Leu | His | Glu | Ile | Thr | Asn | Glu | Thr | Phe | 110 | 115 | 120 | |

| | | | |
|---|-----|-----|-----|
| Arg Gly Leu Arg Arg Leu Glu Arg Leu Tyr Leu Gly Lys Asn Arg | 125 | 130 | 135 |
| Ile Arg His Ile Gln Pro Gly Ala Phe Asp Thr Leu Asp Arg Leu | 140 | 145 | 150 |
| Leu Glu Leu Lys Leu Gln Asp Asn Glu Leu Arg Ala Leu Pro Pro | 155 | 160 | 165 |
| Leu Arg Leu Pro Arg Leu Leu Leu Leu Asp Leu Ser His Asn Ser | 170 | 175 | 180 |
| Leu Leu Ala Leu Glu Pro Gly Ile Leu Asp Thr Ala Asn Val Glu | 185 | 190 | 195 |
| Ala Leu Arg Leu Ala Gly Leu Gly Leu Gln Gln Leu Asp Glu Gly | 200 | 205 | 210 |
| Leu Phe Ser Arg Leu Arg Asn Leu His Asp Leu Asp Val Ser Asp | 215 | 220 | 225 |
| Asn Gln Leu Glu Arg Val Pro Pro Val Ile Arg Gly Leu Arg Gly | 230 | 235 | 240 |
| Leu Thr Arg Leu Arg Leu Ala Gly Asn Thr Arg Ile Ala Gln Leu | 245 | 250 | 255 |
| Arg Pro Glu Asp Leu Ala Gly Leu Ala Ala Leu Gln Glu Leu Asp | 260 | 265 | 270 |
| Val Ser Asn Leu Ser Leu Gln Ala Leu Pro Gly Asp Leu Ser Gly | 275 | 280 | 285 |
| Leu Phe Pro Arg Leu Arg Leu Leu Ala Ala Ala Arg Asn Pro Phe | 290 | 295 | 300 |
| Asn Cys Val Cys Pro Leu Ser Trp Phe Gly Pro Trp Val Arg Glu | 305 | 310 | 315 |
| Ser His Val Thr Leu Ala Ser Pro Glu Glu Thr Arg Cys His Phe | 320 | 325 | 330 |
| Pro Pro Lys Asn Ala Gly Arg Leu Leu Leu Glu Leu Asp Tyr Ala | 335 | 340 | 345 |
| Asp Phe Gly Cys Pro Ala Thr Thr Thr Thr Ala Thr Val Pro Thr | 350 | 355 | 360 |
| Thr Arg Pro Val Val Arg Glu Pro Thr Ala Leu Ser Ser Ser Leu | 365 | 370 | 375 |
| Ala Pro Thr Trp Leu Ser Pro Thr Ala Pro Ala Thr Glu Ala Pro | 380 | 385 | 390 |
| Ser Pro Pro Ser Thr Ala Pro Pro Thr Val Gly Pro Val Pro Gln | 395 | 400 | 405 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Gln | Asp | Cys | Pro | Pro | Ser | Thr | Cys | Leu | Asn | Gly | Gly | Thr | Cys | 410 | 415 | 420 |
| His | Leu | Gly | Thr | Arg | His | His | Leu | Ala | Cys | Leu | Cys | Pro | Glu | Gly | 425 | 430 | 435 |
| Phe | Thr | Gly | Leu | Tyr | Cys | Glu | Ser | Gln | Met | Gly | Gln | Gly | Thr | Arg | 440 | 445 | 450 |
| Pro | Ser | Pro | Thr | Pro | Val | Thr | Pro | Arg | Pro | Pro | Arg | Ser | Leu | Thr | 455 | 460 | 465 |
| Leu | Gly | Ile | Glu | Pro | Val | Ser | Pro | Thr | Ser | Leu | Arg | Val | Gly | Leu | 470 | 475 | 480 |
| Gln | Arg | Tyr | Leu | Gln | Gly | Ser | Ser | Val | Gln | Leu | Arg | Ser | Leu | Arg | 485 | 490 | 495 |
| Leu | Thr | Tyr | Arg | Asn | Leu | Ser | Gly | Pro | Asp | Lys | Arg | Leu | Val | Thr | 500 | 505 | 510 |
| Leu | Arg | Leu | Pro | Ala | Ser | Leu | Ala | Glu | Tyr | Thr | Val | Thr | Gln | Leu | 515 | 520 | 525 |
| Arg | Pro | Asn | Ala | Thr | Tyr | Ser | Val | Cys | Val | Met | Pro | Leu | Gly | Pro | 530 | 535 | 540 |
| Gly | Arg | Val | Pro | Glu | Gly | Glu | Glu | Ala | Cys | Gly | Glu | Ala | His | Thr | 545 | 550 | 555 |
| Pro | Pro | Ala | Val | His | Ser | Asn | His | Ala | Pro | Val | Thr | Gln | Ala | Arg | 560 | 565 | 570 |
| Glu | Gly | Asn | Leu | Pro | Leu | Leu | Ile | Ala | Pro | Ala | Leu | Ala | Ala | Val | 575 | 580 | 585 |
| Leu | Leu | Ala | Ala | Leu | Ala | Ala | Val | Gly | Ala | Ala | Tyr | Cys | Val | Arg | 590 | 595 | 600 |
| Arg | Gly | Arg | Ala | Met | Ala | Ala | Ala | Ala | Gln | Asp | Lys | Gly | Gln | Val | 605 | 610 | 615 |
| Gly | Pro | Gly | Ala | Gly | Pro | Leu | Glu | Leu | Glu | Gly | Val | Lys | Val | Pro | 620 | 625 | 630 |
| Leu | Glu | Pro | Gly | Pro | Lys | Ala | Thr | Glu | Gly | Gly | Gly | Glu | Ala | Leu | 635 | 640 | 645 |
| Pro | Ser | Gly | Ser | Glu | Cys | Glu | Val | Pro | Leu | Met | Gly | Phe | Pro | Gly | 650 | 655 | 660 |
| Pro | Gly | Leu | Gln | Ser | Pro | Leu | His | Ala | Lys | Pro | Tyr | Ile | | | 665 | 670 | |

<210> 53

<211> 23

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 53
tcttcagccg cttgcgcaac ctc 23

<210> 54
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 54
ttgctcacat ccagctcctg cagg 24

<210> 55
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 55
tggatgttgt ccagacaacc agctggagct gtatccgagg c 41

<210> 56
<211> 3462
<212> DNA
<213> Homo sapiens

<400> 56
gaatcatcca cgcacctgca gctctgctga gagagtgcaa gccgtggggg 50

ttttgagctc atcttcatca ttcatatgag gaaataagtg gtaaaatcct 100

tggaaataca atgagactca tcagaaacat ttacatattt tgtagtattg 150

ttatgacagc agaggggtgat gctccagagc tgccagaaga aagggaactg 200

atgaccaact gctccaacat gtctctaaga aagggttccc cagacttgac 250

cccagccaca acgacactgg atttatccta taacctcctt tttcaactcc 300

agagttcaga ttttcattct gtctccaaac tgagagtttt gattctatgc 350

cataacagaa ttcaacagct ggatctcaaa acctttgaat tcaacaagga 400

gttaagatat ttagatttgt ctaataacag actgaagagt gtaacttggt 450

atttactggc aggtctcagg tatttagatc tttcttttaa tgactttgac 500

accatgccta tctgtgagga agctggcaac atgtcacacc tggaaatcct 550
aggtttgagt ggggcaaaaa tacaaaaatc agatttccag aaaattgctc 600
atctgcatct aaatactgtc ttcttaggat tcagaactct tcttcattat 650
gaagaaggta gcctgcccat cttaaacaca acaaaactgc acattgtttt 700
accaatggac acaaatttct gggttctttt gcgtgatgga atcaagactt 750
caaaaatatt agaaatgaca aatatagatg gcaaaagcca atttgtaagt 800
tatgaaatgc aacgaaatct tagtttagaa aatgctaaga catcggttct 850
attgcttaat aaagttgatt tactctggga cgaccttttc cttatcttac 900
aatttgtttg gcatacatca gtggaacact ttcagatccg aaatgtgact 950
tttgggtgga aggcttatct tgaccacaat tcatttgact actcaaatac 1000
tgtaatgaga actataaaat tggagcatgt acatttcaga gtgttttaca 1050
ttcaacagga taaaatctat ttgcttttga ccaaaatgga catagaaaac 1100
ctgacaatat caaatgcaca aatgccacac atgcttttcc cgaattatcc 1150
tacgaaattc caatatttaa attttgcaa taatatctta acagacgagt 1200
tgtttaaaag aactatccaa ctgcctcact tgaaaactct cattttgaat 1250
ggcaataaac tggagacact ttctttagta agttgctttg ctaacaacac 1300
acccttgga cacttggaac tgagtcaaaa tctattacaa cataaaaatg 1350
atgaaaattg ctcatggcca gaaactgtgg tcaatatgaa tctgtcatac 1400
aataaattgt ctgattctgt cttcaggtgc ttgccccaaa gtattcaaatt 1450
acttgaccta aataataacc aaatccaaac tgtacctaaa gagactattc 1500
atctgatggc cttacgagaa ctaaattattg catttaattt tctaactgat 1550
ctccctggat gcagtcattt cagtagactt tcagttctga acattgaaat 1600
gaacttcatt ctcagcccat ctctggattt tgttcagagc tgccaggaag 1650
ttaaactct aaatgcggga agaaatccat tccggtgtac ctgtgaatta 1700
aaaaatttca ttcagcttga aacatatca gaggtcatga tggttggatg 1750
gtcagattca tacacctgtg aatacccttt aaacctaagg ggaactaggt 1800
taaaagacgt tcatctccac gaattatctt gcaacacagc tctgttgatt 1850
gtcaccattg tggttattat gctagttctg gggttggctg tggccttctg 1900
ctgtctccac tttgatctgc cctggtatct caggatgcta ggtcaatgca 1950

cacaaacatg gcacagggtt aggaaaacaa cccaagaaca actcaagaga 2000
aatgtccgat tccacgcatt tatttcatac agtgaacatg attctctgtg 2050
ggtgaagaat gaattgatcc ccaatctaga gaaggaagat gggtctatct 2100
tgatttgctt ttatgaaagc tactttgacc ctggcaaaag cattagttaa 2150
aatattgtaa gcttcattga gaaaagctat aagtccatct ttgttttgtc 2200
tcccaacttt gtccagaatg agtgggtgcca ttatgaattc tactttgccc 2250
accacaatct cttccatgaa aattctgac atataattct tatcttactg 2300
gaaccattc cattctattg cattcccacc aggtatcata aactgaaagc 2350
tctcctggaa aaaaaagcat acttggaaatg gcccaaggat aggcgtaaat 2400
gtgggctttt ctgggcaaac cttcgagctg ctattaatgt taatgtatta 2450
gccaccagag aatgtatga actgcagaca ttcacagagt taaatgaaga 2500
gtctcgagggt tctacaatct ctctgatgag aacagattgt ctataaaatc 2550
ccacagtcct tgggaagttg gggaccacat aactgttgg gatgtacatt 2600
gatacaacct ttatgatggc aatttgacaa tatttattaa aataaaaaat 2650
ggttattccc ttcatatcag tttctagaag gatttctaag aatgtatcct 2700
atagaaacac cttcacaagt ttataagggc ttatggaaaa aggtgttcat 2750
cccaggattg ttataaatca tgaaaaatgt ggccagggtc agtggctcac 2800
tcttgtaatc ccagcactat gggaggccaa ggtgggtgac ccacgaggtc 2850
aagagatgga gaccatcctg gccaacatgg tgaaaccctg tctctactaa 2900
aaatacaaaa attagctggg cgtgatgggt cagcctgta gtcccagcta 2950
cttgggaggc tgaggcagga gaatcgcttg aaccgggag gtggcagttg 3000
cagtgaactg agatcgagcc actgcactcc agcctgggtg cagagcgaga 3050
ctccatctca aaaaaaagaa aaaaaaaaaa gaaaaaatg gaaaacatcc 3100
tcatggccac aaaataaggt ctaattcaat aaattatagt acattaatgt 3150
aatataatat tacatgccac taaaaagaat aaggtagctg tatatttcct 3200
ggtatggaaa aaacatatta atatgttata aactattagg ttggtgcaaa 3250
actaattgtg gtttttgcca ttgaaatggc attgaaataa aagtgtaaag 3300
aaatctatac cagatgtagt aacagtggtt tgggtctggg aggttggtatt 3350

acagggagca ttgtatttct atgttggtgta tttctataat gtttgaattg 3400
 tttagaatga atctgtattt cttttataag tagaaaaaaa ataaagatag 3450
 tttttacagc ct 3462

<210> 57
 <211> 811
 <212> PRT
 <213> Homo sapiens

<400> 57
 Met Arg Leu Ile Arg Asn Ile Tyr Ile Phe Cys Ser Ile Val Met 15
 1 5 10
 Thr Ala Glu Gly Asp Ala Pro Glu Leu Pro Glu Glu Arg Glu Leu 30
 20 25
 Met Thr Asn Cys Ser Asn Met Ser Leu Arg Lys Val Pro Ala Asp 45
 35 40
 Leu Thr Pro Ala Thr Thr Thr Leu Asp Leu Ser Tyr Asn Leu Leu 60
 50 55
 Phe Gln Leu Gln Ser Ser Asp Phe His Ser Val Ser Lys Leu Arg 75
 65 70
 Val Leu Ile Leu Cys His Asn Arg Ile Gln Gln Leu Asp Leu Lys 90
 80 85
 Thr Phe Glu Phe Asn Lys Glu Leu Arg Tyr Leu Asp Leu Ser Asn 105
 95 100
 Asn Arg Leu Lys Ser Val Thr Trp Tyr Leu Leu Ala Gly Leu Arg 120
 110 115
 Tyr Leu Asp Leu Ser Phe Asn Asp Phe Asp Thr Met Pro Ile Cys 135
 125 130
 Glu Glu Ala Gly Asn Met Ser His Leu Glu Ile Leu Gly Leu Ser 150
 140 145
 Gly Ala Lys Ile Gln Lys Ser Asp Phe Gln Lys Ile Ala His Leu 165
 155 160
 His Leu Asn Thr Val Phe Leu Gly Phe Arg Thr Leu Pro His Tyr 180
 170 175
 Glu Glu Gly Ser Leu Pro Ile Leu Asn Thr Thr Lys Leu His Ile 195
 185 190
 Val Leu Pro Met Asp Thr Asn Phe Trp Val Leu Leu Arg Asp Gly 210
 200 205
 Ile Lys Thr Ser Lys Ile Leu Glu Met Thr Asn Ile Asp Gly Lys 225
 215 220

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gln | Phe | Val | Ser | Tyr | Glu | Met | Gln | Arg | Asn | Leu | Ser | Leu | Glu | 230 | 235 | 240 |
| Asn | Ala | Lys | Thr | Ser | Val | Leu | Leu | Leu | Asn | Lys | Val | Asp | Leu | Leu | 245 | 250 | 255 |
| Trp | Asp | Asp | Leu | Phe | Leu | Ile | Leu | Gln | Phe | Val | Trp | His | Thr | Ser | 260 | 265 | 270 |
| Val | Glu | His | Phe | Gln | Ile | Arg | Asn | Val | Thr | Phe | Gly | Gly | Lys | Ala | 275 | 280 | 285 |
| Tyr | Leu | Asp | His | Asn | Ser | Phe | Asp | Tyr | Ser | Asn | Thr | Val | Met | Arg | 290 | 295 | 300 |
| Thr | Ile | Lys | Leu | Glu | His | Val | His | Phe | Arg | Val | Phe | Tyr | Ile | Gln | 305 | 310 | 315 |
| Gln | Asp | Lys | Ile | Tyr | Leu | Leu | Leu | Thr | Lys | Met | Asp | Ile | Glu | Asn | 320 | 325 | 330 |
| Leu | Thr | Ile | Ser | Asn | Ala | Gln | Met | Pro | His | Met | Leu | Phe | Pro | Asn | 335 | 340 | 345 |
| Tyr | Pro | Thr | Lys | Phe | Gln | Tyr | Leu | Asn | Phe | Ala | Asn | Asn | Ile | Leu | 350 | 355 | 360 |
| Thr | Asp | Glu | Leu | Phe | Lys | Arg | Thr | Ile | Gln | Leu | Pro | His | Leu | Lys | 365 | 370 | 375 |
| Thr | Leu | Ile | Leu | Asn | Gly | Asn | Lys | Leu | Glu | Thr | Leu | Ser | Leu | Val | 380 | 385 | 390 |
| Ser | Cys | Phe | Ala | Asn | Asn | Thr | Pro | Leu | Glu | His | Leu | Asp | Leu | Ser | 395 | 400 | 405 |
| Gln | Asn | Leu | Leu | Gln | His | Lys | Asn | Asp | Glu | Asn | Cys | Ser | Trp | Pro | 410 | 415 | 420 |
| Glu | Thr | Val | Val | Asn | Met | Asn | Leu | Ser | Tyr | Asn | Lys | Leu | Ser | Asp | 425 | 430 | 435 |
| Ser | Val | Phe | Arg | Cys | Leu | Pro | Lys | Ser | Ile | Gln | Ile | Leu | Asp | Leu | 440 | 445 | 450 |
| Asn | Asn | Asn | Gln | Ile | Gln | Thr | Val | Pro | Lys | Glu | Thr | Ile | His | Leu | 455 | 460 | 465 |
| Met | Ala | Leu | Arg | Glu | Leu | Asn | Ile | Ala | Phe | Asn | Phe | Leu | Thr | Asp | 470 | 475 | 480 |
| Leu | Pro | Gly | Cys | Ser | His | Phe | Ser | Arg | Leu | Ser | Val | Leu | Asn | Ile | 485 | 490 | 495 |
| Glu | Met | Asn | Phe | Ile | Leu | Ser | Pro | Ser | Leu | Asp | Phe | Val | Gln | Ser | 500 | 505 | 510 |

Cys Gln Glu Val Lys Thr Leu Asn Ala Gly Arg Asn Pro Phe Arg
 515 520 525
 Cys Thr Cys Glu Leu Lys Asn Phe Ile Gln Leu Glu Thr Tyr Ser
 530 535 540
 Glu Val Met Met Val Gly Trp Ser Asp Ser Tyr Thr Cys Glu Tyr
 545 550 555
 Pro Leu Asn Leu Arg Gly Thr Arg Leu Lys Asp Val His Leu His
 560 565 570
 Glu Leu Ser Cys Asn Thr Ala Leu Leu Ile Val Thr Ile Val Val
 575 580 585
 Ile Met Leu Val Leu Gly Leu Ala Val Ala Phe Cys Cys Leu His
 590 595 600
 Phe Asp Leu Pro Trp Tyr Leu Arg Met Leu Gly Gln Cys Thr Gln
 605 610 615
 Thr Trp His Arg Val Arg Lys Thr Thr Gln Glu Gln Leu Lys Arg
 620 625 630
 Asn Val Arg Phe His Ala Phe Ile Ser Tyr Ser Glu His Asp Ser
 635 640 645
 Leu Trp Val Lys Asn Glu Leu Ile Pro Asn Leu Glu Lys Glu Asp
 650 655 660
 Gly Ser Ile Leu Ile Cys Leu Tyr Glu Ser Tyr Phe Asp Pro Gly
 665 670 675
 Lys Ser Ile Ser Glu Asn Ile Val Ser Phe Ile Glu Lys Ser Tyr
 680 685 690
 Lys Ser Ile Phe Val Leu Ser Pro Asn Phe Val Gln Asn Glu Trp
 695 700 705
 Cys His Tyr Glu Phe Tyr Phe Ala His His Asn Leu Phe His Glu
 710 715 720
 Asn Ser Asp His Ile Ile Leu Ile Leu Leu Glu Pro Ile Pro Phe
 725 730 735
 Tyr Cys Ile Pro Thr Arg Tyr His Lys Leu Lys Ala Leu Leu Glu
 740 745 750
 Lys Lys Ala Tyr Leu Glu Trp Pro Lys Asp Arg Arg Lys Cys Gly
 755 760 765
 Leu Phe Trp Ala Asn Leu Arg Ala Ala Ile Asn Val Asn Val Leu
 770 775 780
 Ala Thr Arg Glu Met Tyr Glu Leu Gln Thr Phe Thr Glu Leu Asn
 785 790 795

Glu Glu Ser Arg Gly Ser Thr Ile Ser Leu Met Arg Thr Asp Cys
800 805 810

Leu

<210> 58
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 58
tcccaccagg tatcataaac tgaa 24

<210> 59
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 59
ttatagacaa tctgttctca tcagaga 27

<210> 60
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 60
aaaaagcata cttggaatgg cccaaggata ggtgtaaatg 40

<210> 61
<211> 3772
<212> DNA
<213> Homo sapiens

<400> 61
gggggctttc ttgggcttgg ctgcttggaa cacctgcctc caaggaccgg 50
cctcgagggg gtcgccggga aaggaggga agaaggaagg gcggggccgg 100
ccccctgcg cccgccccgc gcctctgcgc gccctgtcc gccccggccc 150
agcccagccc agccccgcgg gccggtcaca cgcgagcca gccggccgcc 200
tcccgcgccc aagcgcgccg ctctgctgtg ccctgcgccc ttgccccgcg 250
ccagcttctg cgcccgagc ccgccccggc cccccggtga ccgtgaccct 300

gccctgggcg cggggcggag caggcatgtc ccgcccgggg accgctaccc 350
cagcgctggc cctggtgctc ctggcagtga ccctggccgg ggtcggagcc 400
cagggcgcag ccctcgagga ccctgattat tacgggcagg agatctggag 450
ccgggagccc tactacgcgc gcccgagacc cgagctcgag accttctctc 500
cgccgctgcc tgcggggccc ggggaggagt gggagcggcg cccgcaggag 550
cccaggccgc ccaagagggc caccaagccc aagaaagctc ccaagaggga 600
gaagtgcggt ccggagccgc ctccaccagg taaacacagc aacaaaaaag 650
ttatgagaac caagagctct gagaaggctg ccaacgatga tcacagtgtc 700
cgtgtggccc gtgaagatgt cagagagagt tgcccacctc ttggtctgga 750
aaccttaaaa atcacagact tccagctcca tgcctccacg gtgaagcgtc 800
atggcctggg ggcacatcga gggagactca acatccaggc gggcattaat 850
gaaaatgatt tttatgacgg agcgtggtgc gcgggaagaa atgacctcca 900
gcagtggatt gaagtggatg ctcggcgcct gaccagattc actggtgtca 950
tcactcaagg gaggaactcc ctctggctga gtgactgggt gacatcctat 1000
aaggatcatg tgagcaatga cagccacacg tgggtcactg ttaagaatgg 1050
atctggagac atgatatttg agggaaacag tgagaaggag atccctgttc 1100
tcaatgagct acccgtcccc atggtggccc gctacatccg cataaacctt 1150
cagtcctggt ttgataatgg gagcatctgc atgagaatgg agatcctggg 1200
ctgcccactg ccagatccta ataattatta tcaccgccgg aacgagatga 1250
ccaccactga tgacctggat ttaagcacc acaattataa ggaaatgcgc 1300
cagttgatga aagttgtgaa tgaaatgtgt cccaatatca ccagaattta 1350
caacattgga aaaagccacc agggcctgaa gctgtatgct gtggagatct 1400
cagatcaccg tggggagcat gaagtcggtg agcccagatt ccactacatc 1450
gcggggggccc acggcaatga ggtgctgggc cgggagctgc tgctgctgct 1500
ggtgcagttc gtgtgtcagg agtacttggc ccggaatgcg cgcacgtcc 1550
acctggtgga ggagacgcgg attcacgtcc tcccctccct caaccccgat 1600
ggctacgaga aggcctacga agggggctcg gagctgggag gctggctcct 1650
gggacgctgg acccacgatg gaattgacat caacaacaac tttcctgatt 1700
taaacacgct gctctgggag gcagaggatc gacagaatgt cccagggaaa 1750

gttcccaatc actatattgc aatccctgag tggtttctgt cggaaaatgc 1800
cacggtggct gccgagacca gagcagtcac agcctggatg gaaaaaatcc 1850
cttttctgct gggcggaac ctgcagggcg gcgagctggt ggtggcgtat 1900
ccctacgacc tggcgcggtc cccctggaag acgcaggaac acacccccac 1950
ccccgatgac cacgtgttcc gctggctggc ctactcctat gcctccacac 2000
accgcctcat gacagacgcc cggaggaggg tgtgccacac ggaggacttc 2050
cagaaggagg agggcactgt caatggggcc tcctggcaca ccgtcgtgg 2100
aagtctgaac gatttcagct accttcatac aaactgcttc gaactgtcca 2150
tctacgtggg ctgtgataaa taccacatg agagccagct gcccgaggag 2200
tgggagaata accgggaatc tctgatcgtg ttcattggagc aggttcacg 2250
tggcattaaa ggcttgggtga gagattcaca tggaaaagga atcccaaacg 2300
ccattatctc cgtagaaggc attaaccatg acatccgaac agccaacgat 2350
ggggattact ggcgcctcct gaaccctgga gagtatgtgg tcacagcaaa 2400
ggccgaaggc ttcactgcat ccaccaagaa ctgtatgggt ggctatgaca 2450
tgggggccac aaggtgtgac ttcacactta gcaaaaccaa catggccagg 2500
atccgagaga tcatggagaa gtttgggaag cagcccgta gcctgccagc 2550
caggcggtc aagctgcggg ggcggaagag acgacagcgt ggtgaccct 2600
cctgggccct tgagactcgt ctgggacca tgcaaattaa accaacctgg 2650
tagtagctcc atagtggact cactcactgt tgtttcctct gtaattcaag 2700
aagtgcctgg aagagagggt gcattgtgag gcaggtcca aaagggaagg 2750
ctggaggctg aggtgtttt cttttctttg ttccattta tccaaataac 2800
ttggacagag cagcagagaa aagctgatgg gagtgagaga actcagcaag 2850
ccaacctggg aatcagagag agaaggagaa ggaggggagc ctgtccgttc 2900
agagcctctg gctgcataga aaaggattct ggtgcttccc ctgtttgcgt 2950
ggcagcaagg gttccacgtg catttgcaat ttgcacagct aaaattgcag 3000
catttcccca gctgggctgt cccaaatgtt accatttgag atgctcccag 3050
gcgtcctaag agaatccacc ctctctggcc ctgggacatt gcaagctgct 3100
acaaataaat tctgtgttct ttgacaata gcgtcattgc caagtgcaca 3150

tcagtgaagcc tcttgaatct gtttagtctc ctttttcaac aaaggagtgt 3200
 gttcagaaaa ggagagagag gctgagatca ttcaggagtt tggtgggcag 3250
 caagcatgga gcttcttgca caaattcttg gtccataaac aacccccaaa 3300
 gtccctgctg atccagtagc cctggagggt cccaggtag ggagagccag 3350
 aggtgccagc cttcctgaag ggccagaaaa tttagcctgg atctcctctt 3400
 ttacctgcta ggactggaaa gagccagaag tggggtggcc tgaagccctc 3450
 tctctgcttg aggtattgcc cctgtgtgga attgagtgt catgggttgg 3500
 cctcatatca gcctgggagt tatttttgat atgtagaatg ccagatcttc 3550
 cagattaggc taaatgtaat gaaaacctct taggattatc tgtggagcat 3600
 cagtttggga agaattattg aattatcttg caagaaaaaa gtatgtctca 3650
 ctttttggtta atgttgctgc ctcattgacc tgggaaaaat gaaaaaaaaa 3700
 aataaagcaa atggtaagac ccttaaaaaa aaaaaaaaaa aaaaaaaaaa 3750
 aaaaaaaaaa aaaaaaaaaa aa 3772

<210> 62

<211> 756

<212> PRT

<213> Homo sapiens

<400> 62

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Arg | Pro | Gly | Thr | Ala | Thr | Pro | Ala | Leu | Ala | Leu | Val | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Ala | Val | Thr | Leu | Ala | Gly | Val | Gly | Ala | Gln | Gly | Ala | Ala | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Glu | Asp | Pro | Asp | Tyr | Tyr | Gly | Gln | Glu | Ile | Trp | Ser | Arg | Glu | Pro |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Tyr | Tyr | Ala | Arg | Pro | Glu | Pro | Glu | Leu | Glu | Thr | Phe | Ser | Pro | Pro |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Leu | Pro | Ala | Gly | Pro | Gly | Glu | Glu | Trp | Glu | Arg | Arg | Pro | Gln | Glu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Pro | Arg | Pro | Pro | Lys | Arg | Ala | Thr | Lys | Pro | Lys | Lys | Ala | Pro | Lys |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Arg | Glu | Lys | Ser | Ala | Pro | Glu | Pro | Pro | Pro | Pro | Gly | Lys | His | Ser |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Asn | Lys | Lys | Val | Met | Arg | Thr | Lys | Ser | Ser | Glu | Lys | Ala | Ala | Asn |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Asp | Asp | His | Ser | Val | Arg | Val | Ala | Arg | Glu | Asp | Val | Arg | Glu | Ser |

| | | |
|---|-----|-----|
| 125 | 130 | 135 |
| Cys Pro Pro Leu Gly Leu Glu Thr Leu Lys Ile Thr Asp Phe Gln | | |
| 140 | 145 | 150 |
| Leu His Ala Ser Thr Val Lys Arg Tyr Gly Leu Gly Ala His Arg | | |
| 155 | 160 | 165 |
| Gly Arg Leu Asn Ile Gln Ala Gly Ile Asn Glu Asn Asp Phe Tyr | | |
| 170 | 175 | 180 |
| Asp Gly Ala Trp Cys Ala Gly Arg Asn Asp Leu Gln Gln Trp Ile | | |
| 185 | 190 | 195 |
| Glu Val Asp Ala Arg Arg Leu Thr Arg Phe Thr Gly Val Ile Thr | | |
| 200 | 205 | 210 |
| Gln Gly Arg Asn Ser Leu Trp Leu Ser Asp Trp Val Thr Ser Tyr | | |
| 215 | 220 | 225 |
| Lys Val Met Val Ser Asn Asp Ser His Thr Trp Val Thr Val Lys | | |
| 230 | 235 | 240 |
| Asn Gly Ser Gly Asp Met Ile Phe Glu Gly Asn Ser Glu Lys Glu | | |
| 245 | 250 | 255 |
| Ile Pro Val Leu Asn Glu Leu Pro Val Pro Met Val Ala Arg Tyr | | |
| 260 | 265 | 270 |
| Ile Arg Ile Asn Pro Gln Ser Trp Phe Asp Asn Gly Ser Ile Cys | | |
| 275 | 280 | 285 |
| Met Arg Met Glu Ile Leu Gly Cys Pro Leu Pro Asp Pro Asn Asn | | |
| 290 | 295 | 300 |
| Tyr Tyr His Arg Arg Asn Glu Met Thr Thr Thr Asp Asp Leu Asp | | |
| 305 | 310 | 315 |
| Phe Lys His His Asn Tyr Lys Glu Met Arg Gln Leu Met Lys Val | | |
| 320 | 325 | 330 |
| Val Asn Glu Met Cys Pro Asn Ile Thr Arg Ile Tyr Asn Ile Gly | | |
| 335 | 340 | 345 |
| Lys Ser His Gln Gly Leu Lys Leu Tyr Ala Val Glu Ile Ser Asp | | |
| 350 | 355 | 360 |
| His Pro Gly Glu His Glu Val Gly Glu Pro Glu Phe His Tyr Ile | | |
| 365 | 370 | 375 |
| Ala Gly Ala His Gly Asn Glu Val Leu Gly Arg Glu Leu Leu Leu | | |
| 380 | 385 | 390 |
| Leu Leu Val Gln Phe Val Cys Gln Glu Tyr Leu Ala Arg Asn Ala | | |
| 395 | 400 | 405 |
| Arg Ile Val His Leu Val Glu Glu Thr Arg Ile His Val Leu Pro | | |

| 410 | | | | | | | | | | 415 | | | | | 420 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Ser | Leu | Asn | Pro | Asp | Gly | Tyr | Glu | Lys | Ala | Tyr | Glu | Gly | Gly | Ser | | | | | |
| | | | | 425 | | | | | 430 | | | | | 435 | | | | | |
| Glu | Leu | Gly | Gly | Trp | Ser | Leu | Gly | Arg | Trp | Thr | His | Asp | Gly | Ile | | | | | |
| | | | | 440 | | | | | 445 | | | | | 450 | | | | | |
| Asp | Ile | Asn | Asn | Asn | Phe | Pro | Asp | Leu | Asn | Thr | Leu | Leu | Trp | Glu | | | | | |
| | | | | 455 | | | | | 460 | | | | | 465 | | | | | |
| Ala | Glu | Asp | Arg | Gln | Asn | Val | Pro | Arg | Lys | Val | Pro | Asn | His | Tyr | | | | | |
| | | | | 470 | | | | | 475 | | | | | 480 | | | | | |
| Ile | Ala | Ile | Pro | Glu | Trp | Phe | Leu | Ser | Glu | Asn | Ala | Thr | Val | Ala | | | | | |
| | | | | 485 | | | | | 490 | | | | | 495 | | | | | |
| Ala | Glu | Thr | Arg | Ala | Val | Ile | Ala | Trp | Met | Glu | Lys | Ile | Pro | Phe | | | | | |
| | | | | 500 | | | | | 505 | | | | | 510 | | | | | |
| Val | Leu | Gly | Gly | Asn | Leu | Gln | Gly | Gly | Glu | Leu | Val | Val | Ala | Tyr | | | | | |
| | | | | 515 | | | | | 520 | | | | | 525 | | | | | |
| Pro | Tyr | Asp | Leu | Val | Arg | Ser | Pro | Trp | Lys | Thr | Gln | Glu | His | Thr | | | | | |
| | | | | 530 | | | | | 535 | | | | | 540 | | | | | |
| Pro | Thr | Pro | Asp | Asp | His | Val | Phe | Arg | Trp | Leu | Ala | Tyr | Ser | Tyr | | | | | |
| | | | | 545 | | | | | 550 | | | | | 555 | | | | | |
| Ala | Ser | Thr | His | Arg | Leu | Met | Thr | Asp | Ala | Arg | Arg | Arg | Val | Cys | | | | | |
| | | | | 560 | | | | | 565 | | | | | 570 | | | | | |
| His | Thr | Glu | Asp | Phe | Gln | Lys | Glu | Glu | Gly | Thr | Val | Asn | Gly | Ala | | | | | |
| | | | | 575 | | | | | 580 | | | | | 585 | | | | | |
| Ser | Trp | His | Thr | Val | Ala | Gly | Ser | Leu | Asn | Asp | Phe | Ser | Tyr | Leu | | | | | |
| | | | | 590 | | | | | 595 | | | | | 600 | | | | | |
| His | Thr | Asn | Cys | Phe | Glu | Leu | Ser | Ile | Tyr | Val | Gly | Cys | Asp | Lys | | | | | |
| | | | | 605 | | | | | 610 | | | | | 615 | | | | | |
| Tyr | Pro | His | Glu | Ser | Gln | Leu | Pro | Glu | Glu | Trp | Glu | Asn | Asn | Arg | | | | | |
| | | | | 620 | | | | | 625 | | | | | 630 | | | | | |
| Glu | Ser | Leu | Ile | Val | Phe | Met | Glu | Gln | Val | His | Arg | Gly | Ile | Lys | | | | | |
| | | | | 635 | | | | | 640 | | | | | 645 | | | | | |
| Gly | Leu | Val | Arg | Asp | Ser | His | Gly | Lys | Gly | Ile | Pro | Asn | Ala | Ile | | | | | |
| | | | | 650 | | | | | 655 | | | | | 660 | | | | | |
| Ile | Ser | Val | Glu | Gly | Ile | Asn | His | Asp | Ile | Arg | Thr | Ala | Asn | Asp | | | | | |
| | | | | 665 | | | | | 670 | | | | | 675 | | | | | |
| Gly | Asp | Tyr | Trp | Arg | Leu | Leu | Asn | Pro | Gly | Glu | Tyr | Val | Val | Thr | | | | | |
| | | | | 680 | | | | | 685 | | | | | 690 | | | | | |
| Ala | Lys | Ala | Glu | Gly | Phe | Thr | Ala | Ser | Thr | Lys | Asn | Cys | Met | Val | | | | | |

| 695 | | | | | 700 | | | | | 705 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Tyr | Asp | Met | Gly | Ala | Thr | Arg | Cys | Asp | Phe | Thr | Leu | Ser | Lys |
| | | | | 710 | | | | | 715 | | | | | 720 |
| Thr | Asn | Met | Ala | Arg | Ile | Arg | Glu | Ile | Met | Glu | Lys | Phe | Gly | Lys |
| | | | | 725 | | | | | 730 | | | | | 735 |
| Gln | Pro | Val | Ser | Leu | Pro | Ala | Arg | Arg | Leu | Lys | Leu | Arg | Gly | Arg |
| | | | | 740 | | | | | 745 | | | | | 750 |
| Lys | Arg | Arg | Gln | Arg | Gly | | | | | | | | | |
| | | | | 755 | | | | | | | | | | |

<210> 63
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 63
 gttctcaatg agctaccgt cccc 24

<210> 64
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 64
 cgcgatgtag tggaactcgg gctc 24

<210> 65
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 65
 atccgcataa accctcagtc ctggtttgat aatgggagca tctgcatgag 50

<210> 66
 <211> 2854
 <212> DNA
 <213> Homo sapiens

<400> 66
 ctaagaggac aagatgaggc ccggcctctc atttctccta gcccttctgt 50
 tcttccttgg ccaagctgca ggggatttgg gggatgtggg acctccaatt 100

cccagccccg gcttcagctc tttcccaggt gttgactcca gctccagctt 150
cagctccagc tccaggtcgg gctccagctc cagccgcagc ttaggcagcg 200
gaggttctgt gtcccagttg ttttccaatt tcaccggctc cgtggatgac 250
cgtgggacct gccagtgtc tgtttccctg ccagacacca cctttcccg 300
ggacagagtg gaacgcttg aattcacagc tcatgttctt tctcagaagt 350
ttgagaaaga actttctaaa gtgagggaat atgtccaatt aattagtgtg 400
tatgaaaaga aactgttaaa cctaactgtc cgaattgaca tcatggagaa 450
ggataccatt tcttacctg aactggactt cgagctgac aaggtagaag 500
tgaaggagat ggaaaaactg gtcatacagc tgaaggagag ttttggtgga 550
agctcagaaa ttgttgacca gctggagggtg gagataagaa atatgactct 600
cttggtagag aagcttgaga cactagacaa aaacaatgtc cttgccattc 650
gccgagaaat cgtggctctg aagaccaagc tgaaagagtg tgaggcctct 700
aaagatcaaa acaccctgt cgtccaccct cctcccactc cagggagctg 750
tggtcatggt ggtgtggtga acatcagcaa accgtctgtg gttcagctca 800
actggagagg gttttcttat ctatatggtg cttggggtag ggattactct 850
ccccagcatc caaacaaggt actgtattgg gtggcgccat tgaatacaga 900
tggggagactg ttggagtatt atagactgta caacacactg gatgatttgc 950
tattgtatat aaatgctcga gagttgcgga tcacctatgg ccaaggtagt 1000
ggtacagcag tttaacaaca caacatgtac gtcaacatgt acaacaccgg 1050
gaatattgcc agagttaacc tgaccaccaa cacgattgct gtgactcaaa 1100
ctctccctaa tgctgcctat aataaccgct tttcatatgc taatgttget 1150
tggcaagata ttgactttgc tgtggatgag aatggattgt gggttattta 1200
ttcaactgaa gccagcactg gtaacatggt gattagtaaa ctcaatgaca 1250
ccacacttca ggtgctaaac acttggtata ccaagcagta taaaccatct 1300
gcttctaacg cttcatggt atgtggggtt ctgtatgcca cccgtactat 1350
gaacaccaga acagaagaga ttttttacta ttatgacaca aacacaggga 1400
aagagggcaa actagacatt gtaatgcata agatgcagga aaaagtgcag 1450
agcattaact ataacccttt tgaccagaaa ctttatgtct ataacgatgg 1500
ttaccttctg aattatgatc tttctgtctt gcagaagccc cagtaagctg 1550

```

tttaggagtt agggtgaaa agaaaatggt tggtgaaaa atagtcttct 1600
ccacttactt agatatctgc aggggtgtct aaaagtgtgt tcattttgca 1650
gcaatgttta ggtgcatagt tctaccacac tagagatcta ggacatttgt 1700
cttgatttgg tgagttctct tgggaatcat ctgcctcttc aggcgcattt 1750
tgcaataaag tctgtctagg gtgggattgt cagaggctca ggggcactgt 1800
gggcctagtg aagcctactg tgaggaggct tcactagaag ccttaaatta 1850
ggaattaagg aacttaaaac tcagtatggc gtctagggat tctttgtaca 1900
ggaaatattg cccaatgact agtcctcatc catgtagcac cactaattct 1950
tccatgcctg gaagaaacct ggggacttag ttaggtagat taatatctgg 2000
agctcctcga gggaccaaact ctccaacttt tttttcccct cactagcacc 2050
tggaatgatg ctttgtatgt ggcagataag taaatttggc atgcttatat 2100
attctacatc tgtaaagtgc tgagttttat ggagagaggc ctttttatgc 2150
attaaattgt acatggcaaa taaatcccag aaggatctgt agatgaggca 2200
cctgcttttt cttttctctc attgtccacc ttactaaaag tcagtagaat 2250
cttctacctc ataacttcct tccaaaggca gctcagaaga ttagaaccag 2300
acttactaac caattccacc ccccaccaac ccccttctac tgcctacttt 2350
aaaaaaatta atagttttct atggaactga tctaagatta gaaaaattaa 2400
ttttctttaa tttcattatg gacttttatt tacatgactc taagactata 2450
agaaaatctg atggcagtga caaagtgcta gcatttattg ttatctaata 2500
aagaccttgg agcatatgtg caacttatga gtgtatcagt tgttgcatgt 2550
aatTTTTGCC tttgtttaag cctggaactt gtaagaaaat gaaaatttaa 2600
tttttttttc taggacgagc tatagaaaag ctattgagag tatctagtta 2650
atcagtgcag tagttggaaa ccttgctggg gtatgtgatg tgcttctgtg 2700
cttttgaatg actttatcat ctagtctttg tctatttttc ctttgatgtt 2750
caagtcctag tctataggat tggcagttta aatgctttac tccccctttt 2800
aaaataaatg attaaaatgt gctttgaaaa aaaaaaaaaa aaaaaaaaaa 2850
aaaa 2854

```

<210> 67

<211> 510

<212> PRT
<213> Homo sapiens

<400> 67

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Pro | Gly | Leu | Ser | Phe | Leu | Leu | Ala | Leu | Leu | Phe | Phe | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Gly | Gln | Ala | Ala | Gly | Asp | Leu | Gly | Asp | Val | Gly | Pro | Pro | Ile | Pro |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ser | Pro | Gly | Phe | Ser | Ser | Phe | Pro | Gly | Val | Asp | Ser | Ser | Ser | Ser |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Phe | Ser | Ser | Ser | Ser | Arg | Ser | Gly | Ser | Ser | Ser | Ser | Arg | Ser | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Gly | Ser | Gly | Gly | Ser | Val | Ser | Gln | Leu | Phe | Ser | Asn | Phe | Thr | Gly |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ser | Val | Asp | Asp | Arg | Gly | Thr | Cys | Gln | Cys | Ser | Val | Ser | Leu | Pro |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Asp | Thr | Thr | Phe | Pro | Val | Asp | Arg | Val | Glu | Arg | Leu | Glu | Phe | Thr |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ala | His | Val | Leu | Ser | Gln | Lys | Phe | Glu | Lys | Glu | Leu | Ser | Lys | Val |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Arg | Glu | Tyr | Val | Gln | Leu | Ile | Ser | Val | Tyr | Glu | Lys | Lys | Leu | Leu |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Asn | Leu | Thr | Val | Arg | Ile | Asp | Ile | Met | Glu | Lys | Asp | Thr | Ile | Ser |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Tyr | Thr | Glu | Leu | Asp | Phe | Glu | Leu | Ile | Lys | Val | Glu | Val | Lys | Glu |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Met | Glu | Lys | Leu | Val | Ile | Gln | Leu | Lys | Glu | Ser | Phe | Gly | Gly | Ser |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Ser | Glu | Ile | Val | Asp | Gln | Leu | Glu | Val | Glu | Ile | Arg | Asn | Met | Thr |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Leu | Leu | Val | Glu | Lys | Leu | Glu | Thr | Leu | Asp | Lys | Asn | Asn | Val | Leu |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Ala | Ile | Arg | Arg | Glu | Ile | Val | Ala | Leu | Lys | Thr | Lys | Leu | Lys | Glu |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Cys | Glu | Ala | Ser | Lys | Asp | Gln | Asn | Thr | Pro | Val | Val | His | Pro | Pro |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Pro | Thr | Pro | Gly | Ser | Cys | Gly | His | Gly | Gly | Val | Val | Asn | Ile | Ser |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Lys | Pro | Ser | Val | Val | Gln | Leu | Asn | Trp | Arg | Gly | Phe | Ser | Tyr | Leu |
| | | | | 260 | | | | | 265 | | | | | 270 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Gly | Ala | Trp | Gly | Arg | Asp | Tyr | Ser | Pro | Gln | His | Pro | Asn | Lys | 275 | 280 | 285 |
| Gly | Leu | Tyr | Trp | Val | Ala | Pro | Leu | Asn | Thr | Asp | Gly | Arg | Leu | Leu | 290 | 295 | 300 |
| Glu | Tyr | Tyr | Arg | Leu | Tyr | Asn | Thr | Leu | Asp | Asp | Leu | Leu | Leu | Tyr | 305 | 310 | 315 |
| Ile | Asn | Ala | Arg | Glu | Leu | Arg | Ile | Thr | Tyr | Gly | Gln | Gly | Ser | Gly | 320 | 325 | 330 |
| Thr | Ala | Val | Tyr | Asn | Asn | Asn | Met | Tyr | Val | Asn | Met | Tyr | Asn | Thr | 335 | 340 | 345 |
| Gly | Asn | Ile | Ala | Arg | Val | Asn | Leu | Thr | Thr | Asn | Thr | Ile | Ala | Val | 350 | 355 | 360 |
| Thr | Gln | Thr | Leu | Pro | Asn | Ala | Ala | Tyr | Asn | Asn | Arg | Phe | Ser | Tyr | 365 | 370 | 375 |
| Ala | Asn | Val | Ala | Trp | Gln | Asp | Ile | Asp | Phe | Ala | Val | Asp | Glu | Asn | 380 | 385 | 390 |
| Gly | Leu | Trp | Val | Ile | Tyr | Ser | Thr | Glu | Ala | Ser | Thr | Gly | Asn | Met | 395 | 400 | 405 |
| Val | Ile | Ser | Lys | Leu | Asn | Asp | Thr | Thr | Leu | Gln | Val | Leu | Asn | Thr | 410 | 415 | 420 |
| Trp | Tyr | Thr | Lys | Gln | Tyr | Lys | Pro | Ser | Ala | Ser | Asn | Ala | Phe | Met | 425 | 430 | 435 |
| Val | Cys | Gly | Val | Leu | Tyr | Ala | Thr | Arg | Thr | Met | Asn | Thr | Arg | Thr | 440 | 445 | 450 |
| Glu | Glu | Ile | Phe | Tyr | Tyr | Tyr | Asp | Thr | Asn | Thr | Gly | Lys | Glu | Gly | 455 | 460 | 465 |
| Lys | Leu | Asp | Ile | Val | Met | His | Lys | Met | Gln | Glu | Lys | Val | Gln | Ser | 470 | 475 | 480 |
| Ile | Asn | Tyr | Asn | Pro | Phe | Asp | Gln | Lys | Leu | Tyr | Val | Tyr | Asn | Asp | 485 | 490 | 495 |
| Gly | Tyr | Leu | Leu | Asn | Tyr | Asp | Leu | Ser | Val | Leu | Gln | Lys | Pro | Gln | 500 | 505 | 510 |

<210> 68
 <211> 410
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 206, 217, 387

<223> unknown base

<400> 68

gctctgaaga ccaagctgaa agagtgtgag gcctctaaag atcaaacacc 50
cctgtcgtcc accctcctcc cactccaggg agctgtgggc atgggtggtgt 100
ggtgaacatc agcaaaccgt ctgtgggttca gctcaactgg agaggggtttt 150
cttatctata tgggtgcttgg ggtagggatt actctcccca gcatccaaac 200
aaagggnatgt attgggnggc gccattgaat acagatggga gactgttgga 250
gtattataga ctgtacaacc cactggatga tttgctattg tatataaatg 300
ctcgagagtt gcggatcacc tatggccaag gtagtggtac agcagtttac 350
aacaacaaca tgtacgtcaa catgtacaac accgggnata ttgccagagt 400
taacctgacc 410

<210> 69

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 69

agctgtgggc atgggtggtgt ggtg 24

<210> 70

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 70

ctaccttggc cataggtgat ccgc 24

<210> 71

<211> 42

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 71

catcagcaaa ccgtctgtgg ttcagctcaa ctggagaggg tt 42

<210> 72

<211> 3127

<212> DNA

<213> Homo sapiens

<400> 72

```
tctcgcagat agtaaataat ctcggaaagg cgagaaagaa gctgtctcca 50
tcttgtctgt atccgctgct cttgtgacgt tgtggagatg gggagcgtcc 100
tggggctgtg ctccatggcg agctggatac catgtttgtg tggaagtgcc 150
ccgtgtttgc tatgccgatg ctgtcctagt ggaaacaact cactgtaac 200
tagattgatc tatgcacttt tcttgcttgt tggagtatgt gtagcttgtg 250
taatgttgat accaggaatg gaagaacaac tgaataagat tcctggattt 300
tgtgagaatg agaaaggtgt tgtcccttgt aacattttgg ttggctataa 350
agctgtatat cgtttgtgct ttggtttggc tatgttctat cttcttctct 400
ctttactaat gatcaaagtg aagagtagca gtgacctag agctgcagtg 450
cacaatggat tttggttctt taaatttgct gcagcaattg caattattat 500
tggggcattc ttcattccag aaggaacttt tacaactgtg tggttttatg 550
taggcattggc aggtgccttt tgtttcatcc tcatacaact agtcttactt 600
attgattttg cacattcatg gaatgaatcg tgggttgaaa aaatggaaga 650
agggaaactc agatgttggg atgcagcctt gttatcagct acagctctga 700
attatctgct gtcttttagtt gctatcgtcc tgttctttgt ctactacact 750
catccagcca gttgttcaga aaacaaggcg ttcattcagt tcaacatgct 800
cctctgcgtt ggtgcttctg taatgtctat actgccaaaa atccaagaat 850
cacaaccaag atctggtttg ttacagtctt cagtaattac agtctacaca 900
atgtatttga catggtcagc tatgaccaat gaaccagaaa caaattgcaa 950
cccaagtcta ctaagcataa ttggctacaa tacaacaagc actgtcccaa 1000
aggaagggca gtcagtccag tgggtggcatg ctcaaggaat tataggacta 1050
attctctttt tgttgtgtgt attttattcc agcatccgta cttcaaaca 1100
tagtcagggt aataaactga ctctaacaag tgatgaatct acattaatag 1150
aagatgggtg agctagaagt gatggatcac tggaggatgg ggacgatgtt 1200
caccgagctg tagataatga aagggatggg gtcacttaca gttattcctt 1250
ctttcacttc atgcttttcc tggcttcact ttatatcatg atgaccctta 1300
ccaactggtc caggtatgaa ccctctcgtg agatgaaaag tcagtggaca 1350
```

gctgtctggg tgaaaatctc ttccagttgg attggcatcg tgctgtatgt 1400
ttggacactc gtggcaccac ttgttcttac aaatcgtgat tttgactgag 1450
tgagacttct agcatgaaag tcccactttg attattgctt atttgaaaac 1500
agtattccca acttttgtaa agttgtgtat gtttttgctt cccatgtaac 1550
ttctccagtg ttctggcatg aattagattht tactgcttgt cattttgtta 1600
ttttcttacc aagtgcattg atatgtgaag tagaatgaat tgcagaggaa 1650
agttttatga atatggtgat gagttagtaa aagtggccat tattgggctt 1700
attctctgct ctatagttgt gaaatgaaga gtaaaaacaa atttgtttga 1750
ctattttaaa attatattag accttaagct gtttttagcaa gcattaaagc 1800
aaatgtatgg ctgccttttg aaatatthga tgtgttgctt ggcaggatac 1850
tgcaaagaac atgggtttatt ttaaaattta taaacaagtc acttaaatgc 1900
cagttgtctg aaaaatctta taaggtttta cccttgatac ggaatttaca 1950
caggtagggg gtgttttagtg gacaatagtg taggttatgg atggaggtgt 2000
cggactataa ttgaataacg agtaaataat cttacttggg tagagatggc 2050
ctttgccaac aaagtgaact gttttggttg ttttaaacct atgaagtatg 2100
ggttcagtgg aaatgttttg aactctgaag gatttagaca aggttttgaa 2150
aaggataatc atgggttaga aggaagtgtt ttgaaagtca ctttgaaagt 2200
tagttttggg ccagcacgg tagctcacc ttggtaatcc cagcactttg 2250
ggagcttaag tgggtagatt acttgagccc aggaattcag accagcttgg 2300
cacatggtga acctgttcta taaaaataat ctggctttga gcatatgcct 2350
gtggtccagc actgagaggc tagtgaagat tgctgagccc agagccaaag 2400
gttgcaatga gcaagtcacg tcaactgcact ctagctggca cagagtaagc 2450
caaaaaata tatatatatt gaaatcaagg aggcaaaatt ttgacaggga 2500
aggaagtaac tgcaaacca ctaggtttha gtaggtactt atataaaatc 2550
tagtccagtt ctctcattta aaaaaatga gacactgaaa tacagactta 2600
aatagctcag atagctaatt aggaatttc aagttggcca ataatagcac 2650
tctctctgac atttaaaaat aatttctatt caaaatacat gcatattgat 2700
ttacacctca tactgtgata attaatgtga tgtggattgc tgggtgtccag 2750
catgacccat aaacaggta gaagaatgat ggaatgtttt agaataaact 2800

cctgcttata gtatactaca cagttcaaaa gatgttttaa atgcttttgt 2850
 atttactgcc atgtaattga aatatataga ttattgtaac ctttcaacct 2900
 gaaaatcaag cagtatgaga gtttagttat ttgtatgtgt cactagtgtc 2950
 taatgaagct tttaaaatct acaatttctt ctttaaaaat atttattaat 3000
 gtgaatggaa tataacaatt cagcttaatt ccccaacctt attctgtgtg 3050
 tagacattgt attccacaat tttgaatggc tgtgttttac ctctaaataa 3100
 atgaattcag agaaaaaaaa aaaaaaa 3127

<210> 73

<211> 453

<212> PRT

<213> Homo sapiens

<400> 73

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Ser | Val | Leu | Gly | Leu | Cys | Ser | Met | Ala | Ser | Trp | Ile | Pro |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Cys | Leu | Cys | Gly | Ser | Ala | Pro | Cys | Leu | Leu | Cys | Arg | Cys | Cys | Pro |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ser | Gly | Asn | Asn | Ser | Thr | Val | Thr | Arg | Leu | Ile | Tyr | Ala | Leu | Phe |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Leu | Leu | Val | Gly | Val | Cys | Val | Ala | Cys | Val | Met | Leu | Ile | Pro | Gly |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Met | Glu | Glu | Gln | Leu | Asn | Lys | Ile | Pro | Gly | Phe | Cys | Glu | Asn | Glu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Lys | Gly | Val | Val | Pro | Cys | Asn | Ile | Leu | Val | Gly | Tyr | Lys | Ala | Val |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Tyr | Arg | Leu | Cys | Phe | Gly | Leu | Ala | Met | Phe | Tyr | Leu | Leu | Leu | Ser |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Leu | Leu | Met | Ile | Lys | Val | Lys | Ser | Ser | Ser | Asp | Pro | Arg | Ala | Ala |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Val | His | Asn | Gly | Phe | Trp | Phe | Phe | Lys | Phe | Ala | Ala | Ala | Ile | Ala |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ile | Ile | Ile | Gly | Ala | Phe | Phe | Ile | Pro | Glu | Gly | Thr | Phe | Thr | Thr |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Val | Trp | Phe | Tyr | Val | Gly | Met | Ala | Gly | Ala | Phe | Cys | Phe | Ile | Leu |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ile | Gln | Leu | Val | Leu | Leu | Ile | Asp | Phe | Ala | His | Ser | Trp | Asn | Glu |
| | | | | 170 | | | | | 175 | | | | | 180 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Trp | Val | Glu | Lys | Met | Glu | Glu | Gly | Asn | Ser | Arg | Cys | Trp | Tyr | 185 | 190 | 195 |
| Ala | Ala | Leu | Leu | Ser | Ala | Thr | Ala | Leu | Asn | Tyr | Leu | Leu | Ser | Leu | 200 | 205 | 210 |
| Val | Ala | Ile | Val | Leu | Phe | Phe | Val | Tyr | Tyr | Thr | His | Pro | Ala | Ser | 215 | 220 | 225 |
| Cys | Ser | Glu | Asn | Lys | Ala | Phe | Ile | Ser | Val | Asn | Met | Leu | Leu | Cys | 230 | 235 | 240 |
| Val | Gly | Ala | Ser | Val | Met | Ser | Ile | Leu | Pro | Lys | Ile | Gln | Glu | Ser | 245 | 250 | 255 |
| Gln | Pro | Arg | Ser | Gly | Leu | Leu | Gln | Ser | Ser | Val | Ile | Thr | Val | Tyr | 260 | 265 | 270 |
| Thr | Met | Tyr | Leu | Thr | Trp | Ser | Ala | Met | Thr | Asn | Glu | Pro | Glu | Thr | 275 | 280 | 285 |
| Asn | Cys | Asn | Pro | Ser | Leu | Leu | Ser | Ile | Ile | Gly | Tyr | Asn | Thr | Thr | 290 | 295 | 300 |
| Ser | Thr | Val | Pro | Lys | Glu | Gly | Gln | Ser | Val | Gln | Trp | Trp | His | Ala | 305 | 310 | 315 |
| Gln | Gly | Ile | Ile | Gly | Leu | Ile | Leu | Phe | Leu | Leu | Cys | Val | Phe | Tyr | 320 | 325 | 330 |
| Ser | Ser | Ile | Arg | Thr | Ser | Asn | Asn | Ser | Gln | Val | Asn | Lys | Leu | Thr | 335 | 340 | 345 |
| Leu | Thr | Ser | Asp | Glu | Ser | Thr | Leu | Ile | Glu | Asp | Gly | Gly | Ala | Arg | 350 | 355 | 360 |
| Ser | Asp | Gly | Ser | Leu | Glu | Asp | Gly | Asp | Asp | Val | His | Arg | Ala | Val | 365 | 370 | 375 |
| Asp | Asn | Glu | Arg | Asp | Gly | Val | Thr | Tyr | Ser | Tyr | Ser | Phe | Phe | His | 380 | 385 | 390 |
| Phe | Met | Leu | Phe | Leu | Ala | Ser | Leu | Tyr | Ile | Met | Met | Thr | Leu | Thr | 395 | 400 | 405 |
| Asn | Trp | Ser | Arg | Tyr | Glu | Pro | Ser | Arg | Glu | Met | Lys | Ser | Gln | Trp | 410 | 415 | 420 |
| Thr | Ala | Val | Trp | Val | Lys | Ile | Ser | Ser | Ser | Trp | Ile | Gly | Ile | Val | 425 | 430 | 435 |
| Leu | Tyr | Val | Trp | Thr | Leu | Val | Ala | Pro | Leu | Val | Leu | Thr | Asn | Arg | 440 | 445 | 450 |
| Asp | Phe | Asp | | | | | | | | | | | | | | | |

<210> 74
<211> 480
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 48, 163
<223> unknown base

<400> 74
gcgagaaaga agctgtctcc atcttgtctg tatcccgtg cttcttgnga 50
cgttgtggag atggggagcg tccctggggc tgtgctccat ggcgagctgg 100
ataccatgtt tgtgtggaag tgccccgtgt ttgctatgcc gatgctgtcc 150
tagtggaac aantccactg taactagatt gatctatgca cttttcttgc 200
ttgttgagat atgtgtagct tgtgtaatgt tgataccagg aatggaagaa 250
caactgaata agattcctgg attttgtgag aatgagaaag gtgttgctcc 300
ttgtaacatt ttggttggt ataaagctgt atatcgtttg tgctttggtt 350
tggtatgtt ctatcttctt ctctctttac taatgatcaa agtgaagagt 400
agcagtgatc ctagagctgc agtgcacaat ggattttggt tctttaaatt 450
tgctgcagca attgcaatta ttattggggc 480

<210> 75
<211> 438
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 32, 65, 92, 121, 142, 154, 170, 293, 315, 323
<223> unknown base

<400> 75
gttattgtga actttgtgga gatgggaggt cntggggctg tgttccatgg 50
cgagctggat accangtttg tgtggaagtg ccccggtgtt gntatgccga 100
tgctgtccta gtgaaacaa ntccactgta attagattga tntatgcact 150
ttntttgctt gttggagtan gtgtagcttg tgtaatgttg ataccaggaa 200
tggaagaaca actgaataag attcctggat tttgtgagaa tgagaaaggt 250
gttgctccctt gtaacatttt gggttgctat aaagctgtat atngtttgtg 300
ctttggtttg gctangttct atnttcttct ctctttacta atgatcaaag 350
tgaagagtag cagtgtcct agagctgcag tgcacaatgg attttggtt 400

tttaaatttg ctgcagcaat tgcaattatt attggggc 438

<210> 76
<211> 473
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 48
<223> unknown base

<400> 76
aagaagctgt ctccatcttg tctgtatccg ctgctcttgt gaacgttntg 50
gagatgggga ggcgccttgg ggttggtgctc catggcgagc tggataccat 100
gtttgtgtgg aagtgcctcg tgtttgctat gccgatgctg tcctagtggg 150
aacaactcca ctgtaactag attgatctat gcacttttct tgcttggttg 200
agtatgtgta gcttggtgtaa tgttgatacc aggaatggaa gaacaactga 250
ataagattcc tggattttgt gagaatgaga aagggtgttg cccttgtaac 300
atthttggttg gctataaagc tgtatatcgt ttgtgctttg gtttggctat 350
gttctatctt cttctctctt tactaatgat caaagtgaag agtagcagtg 400
atcctagagc tgcagtgcac aatggatttt ggttctttta atttgctgca 450
gcaattgcaa ttattattgg ggc 473

<210> 77
<211> 666
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 21, 111
<223> unknown base

<400> 77
gctgtcctta gtggaaacaa ntccaacttg taacttggat tgatctatgc 50
actttttcct tgcttggttg agtatgtgta gctttgtgta atgttggtcc 100
caggattgga ngaacaactg aataagattc ctggattttt gtgagaatga 150
gaaaggtggt gtcccccttg aacatttttg gttggctata aagctgtata 200
tcgtttgtgc tttgggttgg ctatgttcta tcttcttctc tctttactaa 250
tgatcaaagt gaagagtagc agtgatccta gagctgcagt gcacaatgga 300

ttttggttct ttaaatttgc tgcagcaatt gcaattatta ttggggcatt 350
cttcattcca gaaggaactt ttacaactgt gtgggtttat gtaggcatgg 400
caggtgcctt ttgtttcatc ctcatacaac tagtcttact tattgatttt 450
gcacattcat ggaatgaatc gtgggttgaa aaaatggaag aagggaactc 500
gagatgttgg tatgcagcct tggtatcagc tacagctctg aattatctgc 550
tgtcttttagt tgctatcgtc ctgttctttg tctactacac tcatccagcc 600
agttgttcag aaaacaaggc gttcatcagt gtcaacatgc tcctctgcgt 650
tggtgcttct gtaatg 666

<210> 78

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 78

atgtttgtgt ggaagtgcc cg 22

<210> 79

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 79

gtcaacatgc tcctctgc 18

<210> 80

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 80

aatccattgt gcactgcagc tctagg 26

<210> 81

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 81
gagcatgccca ccactggact gac 23

<210> 82
<211> 54
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 82
gccgatgctg tcctagtgga aacaactcca ctgtaactag attgatctat 50

gcac 54

<210> 83
<211> 3906
<212> DNA
<213> Homo sapiens

<400> 83
ctcgggcgcg cacaggcagc tcggtttgcc ctgcgattga gctgcggggtc 50

gcggccggcg ccggcctctc caatggcaaa tgtgtgtggc tggaggcgag 100

cgcgaggctt tcggcaaagg cagtcgagtg tttgcagacc ggggcgagtc 150

ctgtgaaagc agataaaaga aaacatttat taacgtgtca ttacgagggg 200

agcgcccggc cggggctgtc gcactccccg cggaacattt ggctccctcc 250

agctccgaga gaggagaaga agaaagcgga aaagaggcag attcacgtcg 300

tttccagcca agtgagacctg atcgatggcc ctctgaatt tatcacgata 350

tttgatttat tagcgatgcc ccctgggttg tgtgttacgc acacacacgt 400

gcacacaagg ctctggctcg ctctccctccc tcgtttccag ctcttgggcg 450

aatcccatat ctgtttcaac tctccgccga gggcgagcag gagcgagagt 500

gtgtcgaatc tgcgagtga gagggacgag ggaaaagaaa caaagccaca 550

gacgcaactt gagactcccc catccccaaa gaagcaccag atcagcaaaa 600

aaagaagatg ggccccccga gcctcgtgct gtgcttgctg tccgcaactg 650

tggttctccct gctgggtgga agctcggcct tcctgtcgca ccaccgcctg 700

aaaggcaggt ttcagaggga ccgcagggaac atccgccccca acatcatcct 750

ggtgctgacg gacgaccagg atgtggagct gggttccatg caggtgatga 800

acaagacccg gcgcatcatg gagcagggcg gggcgcaact catcaacgcc 850

ttcgtgacca caccatgtg ctgccccca cgctcctcca tcctcactgg 900

caagtaacgtc cacaaccaca acacctacac caacaatgag aactgctcct 950
cgccctcctg gcaggcacag cacgagagcc gcacctttgc cgtgtacctc 1000
aatagcactg gctaccggac agctttcttc gggaagtatc ttaatgaata 1050
caacggctcc tacgtgccac ccggttgaa ggagtgggtc ggactcctta 1100
aaaactcccg cttttataac tacacgctgt gtcggaacgg ggtgaaagag 1150
aagcacggct ccgactactc caaggattac ctcacagacc tcacaccaa 1200
tgacagcgtg agcttcttcc gcacgtccaa gaagatgtac ccgcacaggc 1250
cagtcctcat ggtcatcagc catgcagccc cccacggccc tgaggattca 1300
gccccacaat attcacgcct cttcccaaac gcattctcagc acatcacgcc 1350
gagctacaac tacgcgcca acccgacaa aactggatc atgcgctaca 1400
cgggggccat gaagccatc cacatggaat tcaccaacat gctccagcgg 1450
aagcgcttgc agaccctcat gtcggtggac gactccatgg agacgattta 1500
caacatgctg gttgagacgg gcgagctgga caacacgtac atcgtataca 1550
ccgccgacca cggttaccac atcgccagt ttggcctggt gaaagggaaa 1600
tccatgccat atgagtttga catcagggtc ccgttctacg tgagggggccc 1650
caacgtggaa gccggctgtc tgaatcccca catcgtctc aacattgacc 1700
tgggcccccac catcctggac attgcaggcc tggacatacc tgcggatatg 1750
gacgggaaat ccattctcaa gctgctggac acggagcggc cggatgaatc 1800
gtttcacttg aaaaagaaga tgaggggtctg gcgggactcc ttcttggtgg 1850
agagaggcaa gctgtacac aagagagaca atgacaaggc ggacggccag 1900
gaggagaact ttctgccccaa gtaccagcgt gtgaaggacc tgtgtcagcg 1950
tgctgagtac cagacggcgt gtgagcagct gggacagaag tggcagtgtg 2000
tggaggacgc cacggggaag ctgaagctgc ataagtgcaa gggcccatg 2050
cggctgggcg gcagcagagc cctctccaac ctctgtccca agtactacgg 2100
gcagggcagc gaggcctgca cctgtgacag cggggactac aagctcagcc 2150
tggccggacg ccggaaaaaa ctcttcaaga agaagtacaa ggccagctat 2200
gtccgcagtc gctccatccg ctcagtggcc atcgaggtgg acggcagggc 2250
gtaccacgta ggctgggtg atgccgcca gcccgaac ctcaccaagc 2300

ggcactggcc aggggcccct gaggaccaag atgacaagga tgggtggggac 2350
ttcagtggca ctggaggcct tcccgactac tcagccgccca accccattaa 2400
agtgacacat cgggtgctaca tcctagagaa cgacacagtc cagtgtgacc 2450
tggacctgta caagtcacctg caggcctgga aagaccacaa gctgcacatc 2500
gaccacgaga ttgaaaccct gcagaacaaa attaagaacc tgaggggaagt 2550
ccgaggtcac ctgaagaaaa agcggccaga agaattgtgac tgtcacaaaa 2600
tcagctacca caccagcac aaaggccgcc tcaagcacag aggctccagt 2650
ctgcatcctt tcaggaaggg cctgcaagag aaggacaagg tgtggctgtt 2700
gcgggagcag aagcgcaaga agaaactccg caagctgctc aagcgctgc 2750
agaacaacga cacgtgcagc atgccaggcc tcacgtgctt caccacgac 2800
aaccagcact ggcagacggc gcctttctgg aactggggc ctttctgtgc 2850
ctgcaccagc gccacaata acacgtactg gtgcatgagg accatcaatg 2900
agactcaciaa tttcctcttc tgtgaatttg caactggctt cctagagtac 2950
tttgatctca acacagaccc ctaccagctg atgaatgcag tgaacacact 3000
ggacagggat gtcctcaacc agctacacgt acagctcatg gagctgagga 3050
gctgcaaggg ttacaagcag tgtaaccccc ggactcgaaa catggacctg 3100
gatggaggaa gctatgagca atacaggcag tttcagcgtc gaaagtggcc 3150
agaaatgaag agaccttctt ccaaactact gggacaactg tgggaaggct 3200
gggaagggtta agaaacaaca gaggtggacc tccaaaaaca tagaggcatc 3250
acctgactgc acaggcaatg aaaaaccatg tgggtgattt ccagcagacc 3300
tgtgctattg gccaggaggc ctgagaaagc aagcacgcac tctcagtcaa 3350
catgacagat tctggaggat aaccagcagg agcagagata acttcaggaa 3400
gtccattttt gcccctgctt ttgctttgga ttatacctca ccagctgcac 3450
aaaatgcatt ttttcgtatc aaaaagtcac cactaacctt cccccagaag 3500
ctcaciaaagg aaaacggaga gagcgagcga gagagatttc cttggaaatt 3550
tctcccaagg gcgaaagtca ttggaatttt taaatcatag gggaaaagca 3600
gtcctgttct aaatcctctt attcttttgg tttgtcacia agaaggaact 3650
aagaagcagg acagaggcaa cgtggagagg ctgaaaacag tgcagagacg 3700
tttgacaatg agtcagtagc acaaaagaga tgacatttac ctagcactat 3750

aaaccctggg tgcctctgaa gaaactgcct tcattgtata tatgtgacta 3800
 ttacatgta atcaacatgg gaacttttag gggaacctaa taagaaatcc 3850
 caattttcag gagtggtggg gtcaataaac gctctgtggc cagtgtaaaa 3900
 gaaaaa 3906

<210> 84
 <211> 867
 <212> PRT
 <213> Homo sapiens

<400> 84
 Met Gly Pro Pro Ser Leu Val Leu Cys Leu Leu Ser Ala Thr Val
 1 5 10 15
 Phe Ser Leu Leu Gly Gly Ser Ser Ala Phe Leu Ser His His Arg
 20 25 30
 Leu Lys Gly Arg Phe Gln Arg Asp Arg Arg Asn Ile Arg Pro Asn
 35 40 45
 Ile Ile Leu Val Leu Thr Asp Asp Gln Asp Val Glu Leu Gly Ser
 50 55 60
 Met Gln Val Met Asn Lys Thr Arg Arg Ile Met Glu Gln Gly Gly
 65 70 75
 Ala His Phe Ile Asn Ala Phe Val Thr Thr Pro Met Cys Cys Pro
 80 85 90
 Ser Arg Ser Ser Ile Leu Thr Gly Lys Tyr Val His Asn His Asn
 95 100 105
 Thr Tyr Thr Asn Asn Glu Asn Cys Ser Ser Pro Ser Trp Gln Ala
 110 115 120
 Gln His Glu Ser Arg Thr Phe Ala Val Tyr Leu Asn Ser Thr Gly
 125 130 135
 Tyr Arg Thr Ala Phe Phe Gly Lys Tyr Leu Asn Glu Tyr Asn Gly
 140 145 150
 Ser Tyr Val Pro Pro Gly Trp Lys Glu Trp Val Gly Leu Leu Lys
 155 160 165
 Asn Ser Arg Phe Tyr Asn Tyr Thr Leu Cys Arg Asn Gly Val Lys
 170 175 180
 Glu Lys His Gly Ser Asp Tyr Ser Lys Asp Tyr Leu Thr Asp Leu
 185 190 195
 Ile Thr Asn Asp Ser Val Ser Phe Phe Arg Thr Ser Lys Lys Met
 200 205 210

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Pro | His | Arg | Pro | Val | Leu | Met | Val | Ile | Ser | His | Ala | Ala | Pro | 215 | 220 | 225 |
| His | Gly | Pro | Glu | Asp | Ser | Ala | Pro | Gln | Tyr | Ser | Arg | Leu | Phe | Pro | 230 | 235 | 240 |
| Asn | Ala | Ser | Gln | His | Ile | Thr | Pro | Ser | Tyr | Asn | Tyr | Ala | Pro | Asn | 245 | 250 | 255 |
| Pro | Asp | Lys | His | Trp | Ile | Met | Arg | Tyr | Thr | Gly | Pro | Met | Lys | Pro | 260 | 265 | 270 |
| Ile | His | Met | Glu | Phe | Thr | Asn | Met | Leu | Gln | Arg | Lys | Arg | Leu | Gln | 275 | 280 | 285 |
| Thr | Leu | Met | Ser | Val | Asp | Asp | Ser | Met | Glu | Thr | Ile | Tyr | Asn | Met | 290 | 295 | 300 |
| Leu | Val | Glu | Thr | Gly | Glu | Leu | Asp | Asn | Thr | Tyr | Ile | Val | Tyr | Thr | 305 | 310 | 315 |
| Ala | Asp | His | Gly | Tyr | His | Ile | Gly | Gln | Phe | Gly | Leu | Val | Lys | Gly | 320 | 325 | 330 |
| Lys | Ser | Met | Pro | Tyr | Glu | Phe | Asp | Ile | Arg | Val | Pro | Phe | Tyr | Val | 335 | 340 | 345 |
| Arg | Gly | Pro | Asn | Val | Glu | Ala | Gly | Cys | Leu | Asn | Pro | His | Ile | Val | 350 | 355 | 360 |
| Leu | Asn | Ile | Asp | Leu | Ala | Pro | Thr | Ile | Leu | Asp | Ile | Ala | Gly | Leu | 365 | 370 | 375 |
| Asp | Ile | Pro | Ala | Asp | Met | Asp | Gly | Lys | Ser | Ile | Leu | Lys | Leu | Leu | 380 | 385 | 390 |
| Asp | Thr | Glu | Arg | Pro | Val | Asn | Arg | Phe | His | Leu | Lys | Lys | Lys | Met | 395 | 400 | 405 |
| Arg | Val | Trp | Arg | Asp | Ser | Phe | Leu | Val | Glu | Arg | Gly | Lys | Leu | Leu | 410 | 415 | 420 |
| His | Lys | Arg | Asp | Asn | Asp | Lys | Val | Asp | Ala | Gln | Glu | Glu | Asn | Phe | 425 | 430 | 435 |
| Leu | Pro | Lys | Tyr | Gln | Arg | Val | Lys | Asp | Leu | Cys | Gln | Arg | Ala | Glu | 440 | 445 | 450 |
| Tyr | Gln | Thr | Ala | Cys | Glu | Gln | Leu | Gly | Gln | Lys | Trp | Gln | Cys | Val | 455 | 460 | 465 |
| Glu | Asp | Ala | Thr | Gly | Lys | Leu | Lys | Leu | His | Lys | Cys | Lys | Gly | Pro | 470 | 475 | 480 |
| Met | Arg | Leu | Gly | Gly | Ser | Arg | Ala | Leu | Ser | Asn | Leu | Val | Pro | Lys | 485 | 490 | 495 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Tyr | Tyr | Gly | Gln | Gly | Ser | Glu | Ala | Cys | Thr | Cys | Asp | Ser | Gly | Asp | |
| | | | | 500 | | | | | 505 | | | | | 510 | |
| Tyr | Lys | Leu | Ser | Leu | Ala | Gly | Arg | Arg | Lys | Lys | Leu | Phe | Lys | Lys | |
| | | | | 515 | | | | | 520 | | | | | 525 | |
| Lys | Tyr | Lys | Ala | Ser | Tyr | Val | Arg | Ser | Arg | Ser | Ile | Arg | Ser | Val | |
| | | | | 530 | | | | | 535 | | | | | 540 | |
| Ala | Ile | Glu | Val | Asp | Gly | Arg | Val | Tyr | His | Val | Gly | Leu | Gly | Asp | |
| | | | | 545 | | | | | 550 | | | | | 555 | |
| Ala | Ala | Gln | Pro | Arg | Asn | Leu | Thr | Lys | Arg | His | Trp | Pro | Gly | Ala | |
| | | | | 560 | | | | | 565 | | | | | 570 | |
| Pro | Glu | Asp | Gln | Asp | Asp | Lys | Asp | Gly | Gly | Asp | Phe | Ser | Gly | Thr | |
| | | | | 575 | | | | | 580 | | | | | 585 | |
| Gly | Gly | Leu | Pro | Asp | Tyr | Ser | Ala | Ala | Asn | Pro | Ile | Lys | Val | Thr | |
| | | | | 590 | | | | | 595 | | | | | 600 | |
| His | Arg | Cys | Tyr | Ile | Leu | Glu | Asn | Asp | Thr | Val | Gln | Cys | Asp | Leu | |
| | | | | 605 | | | | | 610 | | | | | 615 | |
| Asp | Leu | Tyr | Lys | Ser | Leu | Gln | Ala | Trp | Lys | Asp | His | Lys | Leu | His | |
| | | | | 620 | | | | | 625 | | | | | 630 | |
| Ile | Asp | His | Glu | Ile | Glu | Thr | Leu | Gln | Asn | Lys | Ile | Lys | Asn | Leu | |
| | | | | 635 | | | | | 640 | | | | | 645 | |
| Arg | Glu | Val | Arg | Gly | His | Leu | Lys | Lys | Lys | Arg | Pro | Glu | Glu | Cys | |
| | | | | 650 | | | | | 655 | | | | | 660 | |
| Asp | Cys | His | Lys | Ile | Ser | Tyr | His | Thr | Gln | His | Lys | Gly | Arg | Leu | |
| | | | | 665 | | | | | 670 | | | | | 675 | |
| Lys | His | Arg | Gly | Ser | Ser | Leu | His | Pro | Phe | Arg | Lys | Gly | Leu | Gln | |
| | | | | 680 | | | | | 685 | | | | | 690 | |
| Glu | Lys | Asp | Lys | Val | Trp | Leu | Leu | Arg | Glu | Gln | Lys | Arg | Lys | Lys | |
| | | | | 695 | | | | | 700 | | | | | 705 | |
| Lys | Leu | Arg | Lys | Leu | Leu | Lys | Arg | Leu | Gln | Asn | Asn | Asp | Thr | Cys | |
| | | | | 710 | | | | | 715 | | | | | 720 | |
| Ser | Met | Pro | Gly | Leu | Thr | Cys | Phe | Thr | His | Asp | Asn | Gln | His | Trp | |
| | | | | 725 | | | | | 730 | | | | | 735 | |
| Gln | Thr | Ala | Pro | Phe | Trp | Thr | Leu | Gly | Pro | Phe | Cys | Ala | Cys | Thr | |
| | | | | 740 | | | | | 745 | | | | | 750 | |
| Ser | Ala | Asn | Asn | Asn | Thr | Tyr | Trp | Cys | Met | Arg | Thr | Ile | Asn | Glu | |
| | | | | 755 | | | | | 760 | | | | | 765 | |
| Thr | His | Asn | Phe | Leu | Phe | Cys | Glu | Phe | Ala | Thr | Gly | Phe | Leu | Glu | |
| | | | | 770 | | | | | 775 | | | | | 780 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Tyr | Phe | Asp | Leu | Asn | Thr | Asp | Pro | Tyr | Gln | Leu | Met | Asn | Ala | Val | |
| | | | | 785 | | | | | 790 | | | | | 795 | |
| | | | | | | | | | | | | | | | |
| Asn | Thr | Leu | Asp | Arg | Asp | Val | Leu | Asn | Gln | Leu | His | Val | Gln | Leu | |
| | | | | 800 | | | | | 805 | | | | | 810 | |
| | | | | | | | | | | | | | | | |
| Met | Glu | Leu | Arg | Ser | Cys | Lys | Gly | Tyr | Lys | Gln | Cys | Asn | Pro | Arg | |
| | | | | 815 | | | | | 820 | | | | | 825 | |
| | | | | | | | | | | | | | | | |
| Thr | Arg | Asn | Met | Asp | Leu | Asp | Gly | Gly | Ser | Tyr | Glu | Gln | Tyr | Arg | |
| | | | | 830 | | | | | 835 | | | | | 840 | |
| | | | | | | | | | | | | | | | |
| Gln | Phe | Gln | Arg | Arg | Lys | Trp | Pro | Glu | Met | Lys | Arg | Pro | Ser | Ser | |
| | | | | 845 | | | | | 850 | | | | | 855 | |
| | | | | | | | | | | | | | | | |
| Lys | Ser | Leu | Gly | Gln | Leu | Trp | Glu | Gly | Trp | Glu | Gly | | | | |
| | | | | 860 | | | | | 865 | | | | | | |

<210> 85
 <211> 19
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 85
 gaagccggct gtctgaatc 19

<210> 86
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 86
 ggccagctat ctccgcag 18

<210> 87
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 87
 aagggcctgc aagagaag 18

<210> 88
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 88
cactgggaca actgtggg 18

<210> 89
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 89
cagaggcaac gtggagag 18

<210> 90
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 90
aagtattgtc atacagtgtt c 21

<210> 91
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 91
tagtacttgg gcacgaggtt ggag 24

<210> 92
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 92
tcataccaac tgctgggtcat tggc 24

<210> 93
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 93
ctcaagctgc tggacacgga gcggccggtg aatcggtttc acttg 45

<210> 94
<211> 971
<212> DNA
<213> Homo sapiens

<400> 94
aacaaagttc agtgactgag agggctgagc ggaggctgct gaaggggaga 50
aaggagtgag gagctgctgg gcagagaggg actgtccggc tcccagatgc 100
tgggcctcct ggggagcaca gccctcgtgg gatggatcac aggtgctgct 150
gtggcggtcc tgctgctgct gctgctgctg gccacctgcc ttttccacgg 200
acggcaggac tgtgacgtgg agaggaaccg tacagctgca gggggaaacc 250
gagtccgccg ggcccagcct tggcccttcc ggcggcgggg ccacctggga 300
atctttcacc atcacgtca tcctggccac gtatctcatg tgccgaatgt 350
gggcctccac caccaccacc acccccgcca caccctcac cacctccacc 400
accaccacca cccccaccgc caccatcccc gccacgctcg ctgaggctgc 450
tgtcgccggt gcctgtggac agcagctgcc cctgccctcc catctgttcc 500
caggacaagt ggaccccatg tttccatgtg gaaggatgca tctctggggt 550
gaacgagggg aacaatagac tggggcttgc tccagctgca tttgcatggc 600
atgccccagt gtactatggc agcagagaat ggaggaacac tgggtctgca 650
gtgctgaagg gtttggggag tggagagcaa gggtgctctt tcggggctgg 700
acagcccgtc ttgtgacagt gactcccagt gagccccaga aatgacaagc 750
gtgtcttggc agagccagca cacaagtgga tgtgaagtgc ccgtcttgac 800
ctcctcatca ggctgctgca ggcctctggc gggcagggca ctgggagagg 850
ccctgagaat gtccttttgg tttggagaag gcagtgtgag gctgcacagt 900
caattcatcg gtgccttagt ccaagaaaat aaaaaccact aagaagcttt 950
aaaaaaaaa aaaaaaaaaa a 971

<210> 95
<211> 115
<212> PRT
<213> Homo sapiens

<400> 95
Met Leu Gly Leu Leu Gly Ser Thr Ala Leu Val Gly Trp Ile Thr
1 5 10 15

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ala | Ala | Val | Ala | Val | Leu | Leu | Leu | Leu | Leu | Leu | Leu | Ala | Thr |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Cys | Leu | Phe | His | Gly | Arg | Gln | Asp | Cys | Asp | Val | Glu | Arg | Asn | Arg |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Thr | Ala | Ala | Gly | Gly | Asn | Arg | Val | Arg | Arg | Ala | Gln | Pro | Trp | Pro |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Phe | Arg | Arg | Arg | Gly | His | Leu | Gly | Ile | Phe | His | His | His | Arg | His |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Pro | Gly | His | Val | Ser | His | Val | Pro | Asn | Val | Gly | Leu | His | His | His |
| | | | | 80 | | | | | 85 | | | | | 90 |
| His | His | Pro | Arg | His | Thr | Pro | His | His | Leu | His | His | His | His | His |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Pro | His | Arg | His | His | Pro | Arg | His | Ala | Arg | | | | | |
| | | | | 110 | | | | | 115 | | | | | |

<210> 96
 <211> 1312
 <212> DNA
 <213> Homo sapiens

<400> 96
 ggcggctgct gagctgcctt gaggtgcagt gttggggatc cagagccatg 50
 tcggacctgc tactactggg cctgattggg ggctgactc tcttactgct 100
 gctgacgctg ctggcctttg ccgggtactc agggctactg gctgggggtg 150
 aagtgagtgc tgggtcaccc cccatccgca acgtcactgt ggcctacaag 200
 ttccacatgg ggctctatgg tgagactggg cggcttttca ctgagagctg 250
 cagcatctct cccaagctcc gctecatgc tgtctactat gacaaccccc 300
 acatggtgcc ccctgataag tgccgatgtg ccgtgggcag catcctgagt 350
 gaaggtgagg aatcgccctc ccctgagctc atcgacctct accagaaatt 400
 tggcttcaag gtgttctcct tcccggcacc cagccatgtg gtgacagcca 450
 ccttccccta caccaccatt ctgtccatct ggctggctac ccgccgtgtc 500
 catcctgcct tggacaccta catcaaggag cggaagctgt gtgcctatcc 550
 tcggctggag atctaccagg aagaccagat ccatttcatg tgcccactgg 600
 cacggcaggg agacttctat gtgcctgaga tgaaggagac agagtggaaa 650
 tggcgggggc ttgtggaggc cattgacacc caggtggatg gcacaggagc 700
 tgacacaatg agtgacacga gttctgtaag cttggaagtg agccctggca 750

```

gccgggagac ttcagctgcc acactgtcac ctggggcgag cagccgtggc 800
tgggatgacg gtgacacccg cagcgagcac agctacagcg agtcagggtgc 850
cagcgggctcc tcttttgagg agctggactt ggagggcgag gggcccttag 900
gggagtcacg gctggaccct gggactgagc ccctggggac taccaagtgg 950
ctctggggagc ccactgcccc tgagaagggc aaggagtaac ccatggcctg 1000
caccctcctg cagtgcagtt gctgaggaac tgagcagact ctccagcaga 1050
ctctccagcc ctcttctctc ttcctctggg ggaggagggg ttcctgaggg 1100
acctgacttc ccctgctcca ggcctcttgc taagccttct cctcactgcc 1150
ctttaggctc ccagggccag aggagccagg gactattttc tgcaccagcc 1200
cccagggtg cgcgccctgt tgtgtctttt tttcagactc acagtggagc 1250
ttccaggacc cagaataaag ccaatgattt acttgtttca cctggaaaaa 1300
aaaaaaaaaa aa 1312

```

```

<210> 97
<211> 313
<212> PRT
<213> Homo sapiens

```

```

<400> 97
Met Ser Asp Leu Leu Leu Leu Gly Leu Ile Gly Gly Leu Thr Leu
 1             5             10             15
Leu Leu Leu Leu Thr Leu Leu Ala Phe Ala Gly Tyr Ser Gly Leu
          20             25             30
Leu Ala Gly Val Glu Val Ser Ala Gly Ser Pro Pro Ile Arg Asn
          35             40             45
Val Thr Val Ala Tyr Lys Phe His Met Gly Leu Tyr Gly Glu Thr
          50             55             60
Gly Arg Leu Phe Thr Glu Ser Cys Ser Ile Ser Pro Lys Leu Arg
          65             70             75
Ser Ile Ala Val Tyr Tyr Asp Asn Pro His Met Val Pro Pro Asp
          80             85             90
Lys Cys Arg Cys Ala Val Gly Ser Ile Leu Ser Glu Gly Glu Glu
          95             100            105
Ser Pro Ser Pro Glu Leu Ile Asp Leu Tyr Gln Lys Phe Gly Phe
          110            115            120
Lys Val Phe Ser Phe Pro Ala Pro Ser His Val Val Thr Ala Thr
          125            130            135

```

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Phe | Pro | Tyr | Thr | Thr | Ile | Leu | Ser | Ile | Trp | Leu | Ala | Thr | Arg | Arg | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Val | His | Pro | Ala | Leu | Asp | Thr | Tyr | Ile | Lys | Glu | Arg | Lys | Leu | Cys | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Ala | Tyr | Pro | Arg | Leu | Glu | Ile | Tyr | Gln | Glu | Asp | Gln | Ile | His | Phe | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Met | Cys | Pro | Leu | Ala | Arg | Gln | Gly | Asp | Phe | Tyr | Val | Pro | Glu | Met | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Lys | Glu | Thr | Glu | Trp | Lys | Trp | Arg | Gly | Leu | Val | Glu | Ala | Ile | Asp | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Thr | Gln | Val | Asp | Gly | Thr | Gly | Ala | Asp | Thr | Met | Ser | Asp | Thr | Ser | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ser | Val | Ser | Leu | Glu | Val | Ser | Pro | Gly | Ser | Arg | Glu | Thr | Ser | Ala | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Ala | Thr | Leu | Ser | Pro | Gly | Ala | Ser | Ser | Arg | Gly | Trp | Asp | Asp | Gly | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Asp | Thr | Arg | Ser | Glu | His | Ser | Tyr | Ser | Glu | Ser | Gly | Ala | Ser | Gly | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Ser | Ser | Phe | Glu | Glu | Leu | Asp | Leu | Glu | Gly | Glu | Gly | Pro | Leu | Gly | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Glu | Ser | Arg | Leu | Asp | Pro | Gly | Thr | Glu | Pro | Leu | Gly | Thr | Thr | Lys | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Trp | Leu | Trp | Glu | Pro | Thr | Ala | Pro | Glu | Lys | Gly | Lys | Glu | | | |
| | | | | 305 | | | | | 310 | | | | | | |

<210> 98

<211> 725

<212> DNA

<213> Homo sapiens

<400> 98

```

ccgcgggaac gctgtcctgg ctgccgccac ccgaacagcc tgtcctggtg 50
ccccggctcc ctgccccgcg cccagtcattg accctgcgcc cctcactcct 100
cccgctccat ctgctgctgc tgctgctgct cagtgcggcg gtgtgccggg 150
ctgaggctgg gctcgaaacc gaaagtcccg tccggaccct ccaagtggag 200
accctggtgg agccccaga accatgtgcc gagccccgtg cttttggaga 250
cacgcttcac atacactaca cggaagctt ggtagatgga cgtattattg 300
acacctccct gaccagagac cctctgggta tagaacttgg ccaaagcag 350

```

gtgattccag gtctggagca gagtcttctc gacatgtgtg tgggagagaa 400
gcgaagggca atcattcctt ctacttggc ctatggaaaa cggggatttc 450
caccatctgt cccagcggat gcagtgggtgc agtatgacgt ggagctgatt 500
gcactaatcc gagccaacta ctggctaaag ctggtgaagg gcattttgcc 550
tctggtaggg atggccatgg tgccagccct cctgggcctc attgggtatc 600
acctatacag aaaggccaat agacccaaag tctccaaaaa gaagctcaag 650
gaagagaaac gaaacaagag caaaaagaaa taataaataa taaattttaa 700
aaaacttaaa aaaaaaaaaa aaaaa 725

<210> 99

<211> 201

<212> PRT

<213> Homo sapiens

<400> 99

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Thr | Leu | Arg | Pro | Ser | Leu | Leu | Pro | Leu | His | Leu | Leu | Leu | Leu | 1 | 5 | 10 | 15 |
| Leu | Leu | Leu | Ser | Ala | Ala | Val | Cys | Arg | Ala | Glu | Ala | Gly | Leu | Glu | 20 | 25 | 30 | |
| Thr | Glu | Ser | Pro | Val | Arg | Thr | Leu | Gln | Val | Glu | Thr | Leu | Val | Glu | 35 | 40 | 45 | |
| Pro | Pro | Glu | Pro | Cys | Ala | Glu | Pro | Ala | Ala | Phe | Gly | Asp | Thr | Leu | 50 | 55 | 60 | |
| His | Ile | His | Tyr | Thr | Gly | Ser | Leu | Val | Asp | Gly | Arg | Ile | Ile | Asp | 65 | 70 | 75 | |
| Thr | Ser | Leu | Thr | Arg | Asp | Pro | Leu | Val | Ile | Glu | Leu | Gly | Gln | Lys | 80 | 85 | 90 | |
| Gln | Val | Ile | Pro | Gly | Leu | Glu | Gln | Ser | Leu | Leu | Asp | Met | Cys | Val | 95 | 100 | 105 | |
| Gly | Glu | Lys | Arg | Arg | Ala | Ile | Ile | Pro | Ser | His | Leu | Ala | Tyr | Gly | 110 | 115 | 120 | |
| Lys | Arg | Gly | Phe | Pro | Pro | Ser | Val | Pro | Ala | Asp | Ala | Val | Val | Gln | 125 | 130 | 135 | |
| Tyr | Asp | Val | Glu | Leu | Ile | Ala | Leu | Ile | Arg | Ala | Asn | Tyr | Trp | Leu | 140 | 145 | 150 | |
| Lys | Leu | Val | Lys | Gly | Ile | Leu | Pro | Leu | Val | Gly | Met | Ala | Met | Val | 155 | 160 | 165 | |
| Pro | Ala | Leu | Leu | Gly | Leu | Ile | Gly | Tyr | His | Leu | Tyr | Arg | Lys | Ala | 170 | 175 | 180 | |

Asn Arg Pro Lys Val Ser Lys Lys Lys Leu Lys Glu Glu Lys Arg
185 190 195

Asn Lys Ser Lys Lys Lys
200

<210> 100
<211> 705
<212> DNA
<213> Homo sapiens

<400> 100
cccgggaacg tgttcctggc tgccgcaccc gaacagcctg tcctggtgcc 50
ccggctccct gccccgcgcc cagtcatgac cctgcgcccc tcaactcctcc 100
cgctccatct gctgctgctg ctgctgctca gtgcggcggt gtgccgggct 150
gaggctgggc tcgaaaccga aagtcccgtc cggaccctcc aagtggagac 200
cctggtggag cccccagaac catgtgccga gcccgctgct tttggagaca 250
cgcttcacat acactacacg ggaagcttgg tagatggacg tattattgac 300
acctccctga ccagagaccc tctggttata gaacttgGCC aaaagcaggt 350
gattccaggt ctggagcaga gtcttctcga catgtgtgtg ggagagaagc 400
gaagggcaat cattccttct cacttggcct atggaaaacg gggatttcca 450
ccatctgtcc cagcggatgc agtgggtgcag tatgacgtgg agctgattgc 500
actaatccga gccaaactact ggctaaagct ggtgaagggc attttgctc 550
tggtagggat ggccatggtg ccaccctcct gggcctcatt gggatatcacc 600
tatacagaaa ggccaataga cccaaagtct ccaaaaagaa gctcaaggaa 650
gagaaacgaa acaagagcaa aaagaaataa taaataataa attttaaaaa 700
actta 705

<210> 101
<211> 543
<212> DNA
<213> Homo sapiens

<400> 101
ccgaaagtcc cgtccggacc ctccaagtgg agaccctggt ggagccccc 50
gaaccatgtg ccgagcccgc tgcttttggg gacacgcttc acatacacta 100
cacgggaagc ttggtagatg gacgtattat tgacacctcc ctgaccagag 150
accctctggt tatagaactt ggccaaaagc aggtgattcc aggtctggag 200

cagagtcttc tgcacatgtg tgtgggagag aagcgaaggg caatcattcc 250
ttctcacttg gcctatggaa aacggggatt tccaccatct gtcccagcgg 300
atgcagtggt gcagtatgac gtggagctga ttgcactaat ccgagccaac 350
tactggctaa agctggtgaa gggcattttg cctctggtag ggatggccat 400
gggtgccagcc ctcttgggcc tcattgggta tcacctatac agaaaggcca 450
atagacccaa agtctccaaa aagaagctca aggaagagaa acgaaacaag 500
agcaaaaaga aataataaat aataaatttt aaaaaactta aaa 543

<210> 102
<211> 1316
<212> DNA
<213> Homo sapiens

<400> 102
ctgctgcac cgggtgtctg gaggtgtgg ccgttttggt ttcttggcta 50
aaatcggggg agtgaggcgg gccggcgcg cgcgacaccg ggctccggaa 100
ccactgcacg acggggctgg actgacctga aaaaaatgtc tggatttcta 150
gagggcttga gatgctcaga atgcattgac tggggggaaa agcgcaatac 200
tattgcttcc attgctgctg gtgtactatt ttttacaggc tgggtgatta 250
tcatagatgc agctgttatt tatccacca tgaaagattt caaccactca 300
taccatgcct gtggtgttat agcaaccata gccttcctaa tgattaatgc 350
agtatcgaat ggacaagtcc gaggtgatag ttacagtga ggttgtctgg 400
gtcaaacagg tgctcgcat tggcttttcg ttggtttcat gttggccttt 450
ggatctctga ttgcatctat gtggattctt tttggaggtt atgttgctaa 500
agaaaaagac atagtatacc ctggaattgc tgtatttttc cagaatgcct 550
tcatcttttt tggagggctg gtttttaagt ttggccgcac tgaagactta 600
tggcagtga caccatctgat ttcccacagc acaacagccc tgcattgggtt 650
tgtttgtttt ttactgctc actcccaacc ttttgtaatg ccattttcta 700
aacttatttc tgagtgtagt ctgagcttaa agttgtgtaa tactaaaatc 750
acgagaacac ctaaacaaca accaaaaatc tattgtggta tgcacttgat 800
taacttataa aatgttagag gaaactttca catgaataat ttttgtcaaa 850
ttttatcatg gtataatttg taaaaataaa aagaaattac aaaagaaatt 900
atggatttgt caatgtaagt atttgtcata tctgaggtcc aaaaccacaa 950

tgaaagtgtg ctgaagattt aatgtgttta ttcaaagtgt gtctcttctg 1000
 tgtcaaagtgt taaatgaaat ataaacattt tttagttttt aaaatattcc 1050
 gtgggtcaaaa ttcttcctca ctataattgg tattttacttt taccaaaaat 1100
 tctgtgaaca tgtaatgtaa ctggccttttg aggggtctccc aaggggtgag 1150
 tggacgtggt ggaagagaga agcaccatgg tccagccacc aggctccctg 1200
 tgtcccttcc atgggaaggt cttccgctgt gcctctcatt ccaagggcag 1250
 gaagatgtga ctgagccatg acacgtgggt ctggtgggat gcacagtcac 1300
 tccacatcca ccaactg 1316

<210> 103

<211> 157

<212> PRT

<213> Homo sapiens

<400> 103

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ser | Gly | Phe | Leu | Glu | Gly | Leu | Arg | Cys | Ser | Glu | Cys | Ile | Asp | 1 | 5 | 10 | 15 |
| Trp | Gly | Glu | Lys | Arg | Asn | Thr | Ile | Ala | Ser | Ile | Ala | Ala | Gly | Val | 20 | 25 | 30 | |
| Leu | Phe | Phe | Thr | Gly | Trp | Trp | Ile | Ile | Ile | Asp | Ala | Ala | Val | Ile | 35 | 40 | 45 | |
| Tyr | Pro | Thr | Met | Lys | Asp | Phe | Asn | His | Ser | Tyr | His | Ala | Cys | Gly | 50 | 55 | 60 | |
| Val | Ile | Ala | Thr | Ile | Ala | Phe | Leu | Met | Ile | Asn | Ala | Val | Ser | Asn | 65 | 70 | 75 | |
| Gly | Gln | Val | Arg | Gly | Asp | Ser | Tyr | Ser | Glu | Gly | Cys | Leu | Gly | Gln | 80 | 85 | 90 | |
| Thr | Gly | Ala | Arg | Ile | Trp | Leu | Phe | Val | Gly | Phe | Met | Leu | Ala | Phe | 95 | 100 | 105 | |
| Gly | Ser | Leu | Ile | Ala | Ser | Met | Trp | Ile | Leu | Phe | Gly | Gly | Tyr | Val | 110 | 115 | 120 | |
| Ala | Lys | Glu | Lys | Asp | Ile | Val | Tyr | Pro | Gly | Ile | Ala | Val | Phe | Phe | 125 | 130 | 135 | |
| Gln | Asn | Ala | Phe | Ile | Phe | Phe | Gly | Gly | Leu | Val | Phe | Lys | Phe | Gly | 140 | 145 | 150 | |
| Arg | Thr | Glu | Asp | Leu | Trp | Gln | | | | | | | | | 155 | | | |

<210> 104

<211> 545
<212> DNA
<213> Homo sapiens

<400> 104
ttcttggcta aaatcggggg agtgaggcgg gccggcgcg cgcgacaccg 50
ggctccggaa cactgcacg acggggctgg actgacctga aaaaaatgtc 100
tggatttcta gagggcttga gatgctcaga atgcattgac tggggggaaa 150
agcgcaatac tattgcttcc attgctgctg gtgtactatt ttttacaggc 200
tgggtggatta tcatagatgc agctgttatt tatcccacca tgaaagattt 250
caaccactca taccatgcct gtggtgttat agcaaccata gccttcctaa 300
tgattaatgc agtatcgaat ggacaagtcc gaggtgatag ttacagtga 350
ggttgctctgg gtcaaacagg tgctcgcat tggcttttcg ttggtttcat 400
gttggccttt ggatctctga ttgcatctat gtggattcct tttggagggt 450
atgttgctaa agaaaaagac atagtatacc ctggaattgc tgtatttttc 500
cagaatgcct tcatcttttt tggagggctg gtttttaagt ttggc 545

<210> 105
<211> 490
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 31, 39, 108, 145, 179, 219, 412, 479
<223> unknown base

<400> 105
tggacggacc tgaaaaaat gtttggattt ntagagggnt tgagatgttc 50
agaatgcatg actgggggaa aagcgcaaact actattgctt ccattgctgc 100
tgggtgtanta ttttttacag gctggtggat tatcatagat gcagntgtta 150
tttatccac catgaaagat ttcaaccant cataccatgc ctgtggtgtt 200
atagcaacca tagccttcnt aatgattaat gcagtatcga atggacaagt 250
ccgaggtgat agttacagtg aagggtgttt gggtaaaca ggtgctcgca 300
tttggctttt cgttggtttc atgttggcct ttggatctct gattgcatct 350
atgtggattc tttttggagg ttatgttgct aaagaaaaag acatagtata 400
ccctggaatt gntgtatttt tccagaatgc cttcatcttt tttggagggc 450
tggtttttaa gtttggccgc actgaagant tatggcagt 490

<210> 106
<211> 466
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 26, 38, 81, 115, 207, 329, 380, 446, 449
<223> unknown base

<400> 106
ggacaccggg ttccggacca atgcangacg ggggtggantg acctgaaaaa 50
aatgttttga ttttttagagg gcttgagatg ntcagaatgc attgactggg 100
ggaaaagcgc aatantattg ctttccattg ctgctgggtgt actatTTTTT 150
acaggggtgt ggattatcat agatgcagct gttattttatc ccaccatgaa 200
agattttnaac cactcatacc atgcctgttg tggtatagca accatagcct 250
tcctaataat taatgcagta tcgaatggac aagtccgagg tgatagttac 300
agtgaagggt gtttgggtca aacaggtgnt cgcatttggc ttttcggttg 350
tttcatgttg gcctttggat ttctgattgn attctatgcg gattcttctt 400
ggaggttatg ttgctaaaga aaaagacata gtataccctg gaattnctnt 450
atTTTTccag aatgcc 466

<210> 107
<211> 377
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 52, 67, 70, 78, 105, 144, 150, 209, 266, 268, 282, 310, 331, 356
<223> unknown base

<400> 107
tagagggcct gagatgctca gaatgcattg actgggggga aaagcgcaat 50
antattgctt ccattgntgn tgggtgnta tttttttaca ggctgggtga 100
ttatnataga tgcagctgtt atttatccca ccatgaaaga tttnaaccan 150
tcataccatg cctgtgggtgt tatagcaacc atagccttcc taatgattaa 200
tgcagtatng aatggacaag tccgaggtga tagttacagt gaagggtgtt 250
tgggtcaaac aggtgntngc atttggcttt tngttgggtt catgttggcc 300
tttgatctn tgattgcatt tatgtggatt ntttttggag gttatgttgc 350

taaagnaataa gacatagtat accctgt 377

<210> 108

<211> 552

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 12, 25, 65, 130, 437, 537

<223> unknown base

<400> 108

gggaggctgt gnccgttttg ttttnttggc taaaatcggg ggagtgaggc 50

ggcccggcgc ggcngacac cgggttccgg gaaccattgc acgacggggt 100

ggactgacct gaaaaaatg tttggatttn tagagggtt gagatgctca 150

gaatgcattg actgggggga aaagcgcaat actattgctt ccattgctgc 200

tggtgtacta ttttttacag gctgggtgat tatcatagat gcagctgtta 250

tttatccac catgaaagat ttcaaccact cataccatgc ctgtggtggt 300

atagcaacca tagccttcct aatgattaat gcagtatcga atggacaagt 350

ccgagggtgat agttacagtg aagggtgtct gggtaaaca ggtgctcgca 400

tttggctttt cggttggtttc atgttggcct ttggatntct gattgcatct 450

atgtggattc tttttggagg ttatgttgct aaagaaaaag acatagtata 500

ccctggaatt gctgtatttt tccagaatgc cttcatnttt tttggagggc 550

tg 552

<210> 109

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 109

gggtggatgg tactgctgca tcc 23

<210> 110

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 110

tgttgtgctg tgggaaatca gatgtg 26

<210> 111

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 111

gtgtctggag gctgtggccg ttttgttttc ttgggctaaa atcggg 46

<210> 112

<211> 3004

<212> DNA

<213> Homo sapiens

<400> 112

cgacgccggc gtgatgtggc ttccgctggg gctgctcctg gctgtgctgc 50

tgctggccgt cctctgcaaa gtttacttgg gactattctc tggcagctcc 100

ccgaatcctt tctccgaaga tgtcaaacgg ccccagcgc ccctggtaac 150

tgacaaggag gccaggaaga aggttctcaa acaagctttt tcagccaacc 200

aagtgccgga gaagctggat gtggtggtaa ttggcagtgg ctttgggggc 250

ctggctgcag ctgcaattct agctaaagct ggcaagcgag tcctggtgct 300

ggaacaacat accaaggcag ggggctgctg tcataccttt ggaaagaatg 350

gccttgaatt tgacacagga atccattaca ttgggcgtat ggaagagggc 400

agcattggcc gttttatctt ggaccagatc actgaagggc agctggactg 450

ggctccccctg tcctctcctt ttgacatcat ggtactggaa gggcccaatg 500

gccgaaagga gtaccccatg tacagtggag agaaagccta cattcagggc 550

ctcaaggaga agtttccaca ggaggaagct atcattgaca agtatataaa 600

gctgggttaag gtggtatcca gtggagcccc tcatgccatc ctgttgaaat 650

tcctcccatt gcccgtaggt cagctcctcg acagggtgtgg gctgctgact 700

cgtttctctc cattccttca agcatccacc cagagcctgg ctgaggtcct 750

gcagcagctg ggggcctcct ctgagctcca ggcagtactc agctacatct 800

tccccactta cgggtgtcacc cccaaccaca gtgccttttc catgcacgcc 850

ctgctgggtca accactacat gaaaggaggc ttttatcccc gaggggggttc 900

cagtgaaatt gccttccaca ccacccctgt gattcagcgg gctggggggcg 950

ctgtcctcac aaaggccact gtgcagagtg tgttgctgga ctcagctggg 1000
aaagcctgtg gtgtcagtggt gaagaagggg catgagctgg tgaacatcta 1050
ttgccccatc gtggtctcca acgcaggact gttcaacacc tatgaacacc 1100
tactgccggg gaacgccccg tgcctgccag gtgtgaagca gcaactgggg 1150
acggtgcggc ccggcttagg catgacctct gttttcatct gcctgcgagg 1200
caccaaggaa gacctgcac tgcctccac caactactat gtttactatg 1250
acacggacat ggaccaggcg atggagcgt acgtctccat gcccagggaa 1300
gaggctgcgg aacacatccc tcttctcttc ttcgctttcc catcagccaa 1350
agatccgacc tgggaggacc gattcccagg ccgggtccacc atgatcatgc 1400
tcatacccac tgcctacgag tggtttgagg agtggcaggc ggagctgaag 1450
ggaaagcggg gcagtgacta tgagacctc aaaaactcct ttgtggaagc 1500
ctctatgtca gtggtcctga aactgttccc acagctggag gggaagggtg 1550
agagtgtgac tgcaggatcc ccactcacca accagttcta tctggctgct 1600
ccccgaggtg cctgctacgg ggctgaccat gacctgggcc gcctgcaccc 1650
ttgtgtgatg gcctccttga gggcccagag ccccatcccc aacctctatc 1700
tgacaggcca ggatatcttc acctgtggac tggtcggggc cctgcaaggt 1750
gccctgctgt gcagcagcgc catcctgaag cggaacttgt actcagacct 1800
taagaatctt gattctagga tccgggcaca gaagaaaaag aattagttcc 1850
atcaggagg agtcagagga atttgccc aa tggctggggc atctcccttg 1900
acttaccat aatgtctttc tgcattagtt ccttgcacgt ataaagcact 1950
ctaatttggg tctgatgcct gaagagaggc ctagttttaa tcacaattcc 2000
gaatctgggg caatggaatc actgcttcca gctggggcag gtgagatctt 2050
tacgcctttt ataacatgcc atccctacta ataggatatt gacttggata 2100
gcttgatgtc tcatgacgag cggcgtcttg catccctcac ccatgcctcc 2150
taactcagt atcaaagcga atattccatc tgtggataga acccctggca 2200
gtgttgctcag ctcaacctgg tgggttcagt tctgtcctga ggcttctgct 2250
ctcattcatt tagtgctacg ctgcacagtt ctacactgtc aagggaaaag 2300
ggagactaat gaggcttaac tcaaaacctg ggcgtgggtt tggttgccat 2350
tccataggtt tggagagctc tagatctctt ttgtgctggg ttcagtggct 2400

```

cttcagggga caggaaatgc ctgtgtctgg ccagtgtggt tctggagctt 2450
tggggtaaca gcaggatcca tcagttagta ggggtgcatgt cagatgatca 2500
tatccaattc atatggaagt cccgggtctg tcttccttat catcggggtg 2550
gcagctgggtt ctcaatgtgc cagcagggac tcagtacctg agcctcaatc 2600
aagccttata caccaaatac acaggggaagg gtgatgcagg gaagggtgac 2650
atcaggagtc agggcatgga ctggtaagat gaatactttg ctgggctgaa 2700
gcaggctgca gggcattcca gccaaaggga cagcagggga cagtgcaggg 2750
aggtgtgggg taaggagggg aagtcacatc agaaaaggga aagccacgga 2800
atgtgtgtga agcccagaaa tggcatttgc agttaattag cacatgtgag 2850
ggttagacag gtaggtgaat gcaagctcaa ggtttggaat aatgactttt 2900
cagttatgtc tttggtatca gacatacgaa aggtctcttt gtagttcgtg 2950
ttaatgtaac attaataaat ttattgattc cattgcttta aaaaaaaaaa 3000

aaaa 3004

```

```

<210> 113
<211> 610
<212> PRT
<213> Homo sapiens

```

```

<400> 113
Met Trp Leu Pro Leu Val Leu Leu Leu Ala Val Leu Leu Leu Ala
 1          5          10          15

Val Leu Cys Lys Val Tyr Leu Gly Leu Phe Ser Gly Ser Ser Pro
      20          25          30

Asn Pro Phe Ser Glu Asp Val Lys Arg Pro Pro Ala Pro Leu Val
      35          40          45

Thr Asp Lys Glu Ala Arg Lys Lys Val Leu Lys Gln Ala Phe Ser
      50          55          60

Ala Asn Gln Val Pro Glu Lys Leu Asp Val Val Val Ile Gly Ser
      65          70          75

Gly Phe Gly Gly Leu Ala Ala Ala Ala Ile Leu Ala Lys Ala Gly
      80          85          90

Lys Arg Val Leu Val Leu Glu Gln His Thr Lys Ala Gly Gly Cys
      95          100          105

Cys His Thr Phe Gly Lys Asn Gly Leu Glu Phe Asp Thr Gly Ile
      110          115          120

```


| | | | |
|-----------------|---------------------|---------------------|-----|
| His Tyr Ile Gly | Arg Met Glu Glu Gly | Ser Ile Gly Arg Phe | Ile |
| | 125 | 130 | 135 |
| Leu Asp Gln Ile | Thr Glu Gly Gln Leu | Asp Trp Ala Pro Leu | Ser |
| | 140 | 145 | 150 |
| Ser Pro Phe Asp | Ile Met Val Leu Glu | Gly Pro Asn Gly Arg | Lys |
| | 155 | 160 | 165 |
| Glu Tyr Pro Met | Tyr Ser Gly Glu Lys | Ala Tyr Ile Gln Gly | Leu |
| | 170 | 175 | 180 |
| Lys Glu Lys Phe | Pro Gln Glu Glu Ala | Ile Ile Asp Lys Tyr | Ile |
| | 185 | 190 | 195 |
| Lys Leu Val Lys | Val Val Ser Ser Gly | Ala Pro His Ala Ile | Leu |
| | 200 | 205 | 210 |
| Leu Lys Phe Leu | Pro Leu Pro Val Val | Gln Leu Leu Asp Arg | Cys |
| | 215 | 220 | 225 |
| Gly Leu Leu Thr | Arg Phe Ser Pro Phe | Leu Gln Ala Ser Thr | Gln |
| | 230 | 235 | 240 |
| Ser Leu Ala Glu | Val Leu Gln Gln Leu | Gly Ala Ser Ser Glu | Leu |
| | 245 | 250 | 255 |
| Gln Ala Val Leu | Ser Tyr Ile Phe Pro | Thr Tyr Gly Val Thr | Pro |
| | 260 | 265 | 270 |
| Asn His Ser Ala | Phe Ser Met His Ala | Leu Leu Val Asn His | Tyr |
| | 275 | 280 | 285 |
| Met Lys Gly Gly | Phe Tyr Pro Arg Gly | Gly Ser Ser Glu Ile | Ala |
| | 290 | 295 | 300 |
| Phe His Thr Ile | Pro Val Ile Gln Arg | Ala Gly Gly Ala Val | Leu |
| | 305 | 310 | 315 |
| Thr Lys Ala Thr | Val Gln Ser Val Leu | Leu Asp Ser Ala Gly | Lys |
| | 320 | 325 | 330 |
| Ala Cys Gly Val | Ser Val Lys Lys Gly | His Glu Leu Val Asn | Ile |
| | 335 | 340 | 345 |
| Tyr Cys Pro Ile | Val Val Ser Asn Ala | Gly Leu Phe Asn Thr | Tyr |
| | 350 | 355 | 360 |
| Glu His Leu Leu | Pro Gly Asn Ala Arg | Cys Leu Pro Gly Val | Lys |
| | 365 | 370 | 375 |
| Gln Gln Leu Gly | Thr Val Arg Pro Gly | Leu Gly Met Thr Ser | Val |
| | 380 | 385 | 390 |
| Phe Ile Cys Leu | Arg Gly Thr Lys Glu | Asp Leu His Leu Pro | Ser |
| | 395 | 400 | 405 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Thr | Asn | Tyr | Tyr | Val | Tyr | Tyr | Asp | Thr | Asp | Met | Asp | Gln | Ala | Met | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Glu | Arg | Tyr | Val | Ser | Met | Pro | Arg | Glu | Glu | Ala | Ala | Glu | His | Ile | |
| | | | | 425 | | | | | 430 | | | | | 435 | |
| Pro | Leu | Leu | Phe | Phe | Ala | Phe | Pro | Ser | Ala | Lys | Asp | Pro | Thr | Trp | |
| | | | | 440 | | | | | 445 | | | | | 450 | |
| Glu | Asp | Arg | Phe | Pro | Gly | Arg | Ser | Thr | Met | Ile | Met | Leu | Ile | Pro | |
| | | | | 455 | | | | | 460 | | | | | 465 | |
| Thr | Ala | Tyr | Glu | Trp | Phe | Glu | Glu | Trp | Gln | Ala | Glu | Leu | Lys | Gly | |
| | | | | 470 | | | | | 475 | | | | | 480 | |
| Lys | Arg | Gly | Ser | Asp | Tyr | Glu | Thr | Phe | Lys | Asn | Ser | Phe | Val | Glu | |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Ala | Ser | Met | Ser | Val | Val | Leu | Lys | Leu | Phe | Pro | Gln | Leu | Glu | Gly | |
| | | | | 500 | | | | | 505 | | | | | 510 | |
| Lys | Val | Glu | Ser | Val | Thr | Ala | Gly | Ser | Pro | Leu | Thr | Asn | Gln | Phe | |
| | | | | 515 | | | | | 520 | | | | | 525 | |
| Tyr | Leu | Ala | Ala | Pro | Arg | Gly | Ala | Cys | Tyr | Gly | Ala | Asp | His | Asp | |
| | | | | 530 | | | | | 535 | | | | | 540 | |
| Leu | Gly | Arg | Leu | His | Pro | Cys | Val | Met | Ala | Ser | Leu | Arg | Ala | Gln | |
| | | | | 545 | | | | | 550 | | | | | 555 | |
| Ser | Pro | Ile | Pro | Asn | Leu | Tyr | Leu | Thr | Gly | Gln | Asp | Ile | Phe | Thr | |
| | | | | 560 | | | | | 565 | | | | | 570 | |
| Cys | Gly | Leu | Val | Gly | Ala | Leu | Gln | Gly | Ala | Leu | Leu | Cys | Ser | Ser | |
| | | | | 575 | | | | | 580 | | | | | 585 | |
| Ala | Ile | Leu | Lys | Arg | Asn | Leu | Tyr | Ser | Asp | Leu | Lys | Asn | Leu | Asp | |
| | | | | 590 | | | | | 595 | | | | | 600 | |
| Ser | Arg | Ile | Arg | Ala | Gln | Lys | Lys | Lys | Asn | | | | | | |
| | | | | 605 | | | | | 610 | | | | | | |

<210> 114
 <211> 1701
 <212> DNA
 <213> Homo sapiens

<400> 114
 gcagcggcga ggcggcggtg gtggctgagt ccgtggtggc agaggcgaag 50
 ggcacagctc taggggttgg caccggcccc gagaggagga tgcgggtccg 100
 gatagggtg acgctgctgc tgtgtgcggt gctgctgagc ttggcctcgg 150
 cgtcctcgga tgaagaaggc agccaggatg aatccttaga ttccaagact 200
 actttgacat cagatgagtc agtaaaggac catactactg caggcagagt 250

agttgctggt caaatatttc ttgattcaga agaatctgaa ttagaatcct 300
ctattcaaga agaggaagac agcctcaaga gccaagaggg ggaaagtgtc 350
acagaagata tcagctttct agagtctcca aatccagaaa acaaggacta 400
tgaagagcca aagaaagtac ggaaaccagc tttgaccgcc attgaaggca 450
cagcacatgg ggagccctgc cacttcctt tcttttctt agataaggag 500
tatgatgaat gtacatcaga tgggagggaa gatggcagac tgtggtgtgc 550
tacaacctat gactacaaag cagatgaaaa gtggggcttt tgtgaaactg 600
aagaagaggc tgctaagaga cggcagatgc aggaagcaga aatgatgtat 650
caaaactggaa tgaaaatcct taatggaagc aataagaaaa gccaaaaaag 700
agaagcatat cggtatctcc aaaaggcagc aagcatgaac cataccaaag 750
ccctggagag agtgtcatat gctcttttat ttggtgatta cttgccacag 800
aatatccagg cagcgagaga gatgtttgag aagctgactg aggaaggctc 850
tcccaaggga cagactgctc ttggctttct gtatgcctct ggacttggtg 900
ttaattcaag tcaggcaaag gctcttgtat attatacatt tggagctctt 950
gggggcaatc taatagccca catggttttg gtaagtagac tttagtggaa 1000
ggctaataat attaacatca gaagaatttg tggtttatag cggccacaac 1050
tttttcagct ttcatgatcc agatttgctt gtattaagac caaatattca 1100
gttgaacttc cttcaaattc ttgttaatgg atataacaca tggaatctac 1150
atgtaaatga aagttggtgg agtcacaaat ttttctttta aatgattagt 1200
ttggctgatt gccctaataa agagagatct gataaatggc tctttttaaa 1250
ttttctctga gttggaattg tcagaatcat tttttacatt agattatcat 1300
aattttaaaa atttttcttt agtttttcaa aattttgtaa atggtggcta 1350
tagaaaaaca acatgaaata ttatacaata ttttgcaaca atgccctaag 1400
aattgttaaa attcatggag ttatttgtgc agaatgactc cagagagctc 1450
tactttctgt tttttacttt tcatgattgg ctgtcttccc atttattctg 1500
gtcattttatt gctagtgaca ctgtgcctgc ttccagtagt ctcattttcc 1550
ctattttgct aatttggtac tttttctttg ctaatttgga agattaactc 1600
atttttaata aaattatgtc taagattaaa aaaaaaaaaa aaaaaaaaaa 1650

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1700

a 1701

<210> 115

<211> 301

<212> PRT

<213> Homo sapiens

<400> 115

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Val | Arg | Ile | Gly | Leu | Thr | Leu | Leu | Leu | Cys | Ala | Val | Leu |
| 1 | | | | 5 | | | | 10 | | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ser | Leu | Ala | Ser | Ala | Ser | Ser | Asp | Glu | Glu | Gly | Ser | Gln | Asp |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Ser | Leu | Asp | Ser | Lys | Thr | Thr | Leu | Thr | Ser | Asp | Glu | Ser | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Asp | His | Thr | Thr | Ala | Gly | Arg | Val | Val | Ala | Gly | Gln | Ile | Phe |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Asp | Ser | Glu | Glu | Ser | Glu | Leu | Glu | Ser | Ser | Ile | Gln | Glu | Glu |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Asp | Ser | Leu | Lys | Ser | Gln | Glu | Gly | Glu | Ser | Val | Thr | Glu | Asp |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Ser | Phe | Leu | Glu | Ser | Pro | Asn | Pro | Glu | Asn | Lys | Asp | Tyr | Glu |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Pro | Lys | Lys | Val | Arg | Lys | Pro | Ala | Leu | Thr | Ala | Ile | Glu | Gly |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Ala | His | Gly | Glu | Pro | Cys | His | Phe | Pro | Phe | Leu | Phe | Leu | Asp |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Glu | Tyr | Asp | Glu | Cys | Thr | Ser | Asp | Gly | Arg | Glu | Asp | Gly | Arg |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Trp | Cys | Ala | Thr | Thr | Tyr | Asp | Tyr | Lys | Ala | Asp | Glu | Lys | Trp |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Phe | Cys | Glu | Thr | Glu | Glu | Glu | Ala | Ala | Lys | Arg | Arg | Gln | Met |
| | | | | 170 | | | | | 175 | | | | | 180 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Glu | Ala | Glu | Met | Met | Tyr | Gln | Thr | Gly | Met | Lys | Ile | Leu | Asn |
| | | | | 185 | | | | | 190 | | | | | 195 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ser | Asn | Lys | Lys | Ser | Gln | Lys | Arg | Glu | Ala | Tyr | Arg | Tyr | Leu |
| | | | | 200 | | | | | 205 | | | | | 210 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Lys | Ala | Ala | Ser | Met | Asn | His | Thr | Lys | Ala | Leu | Glu | Arg | Val |
| | | | | 215 | | | | | 220 | | | | | 225 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Tyr | Ala | Leu | Leu | Phe | Gly | Asp | Tyr | Leu | Pro | Gln | Asn | Ile | Gln |
| | | | | 230 | | | | | 235 | | | | | 240 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ala | Arg | Glu | Met | Phe | Glu | Lys | Leu | Thr | Glu | Glu | Gly | Ser | Pro |
| | | | | 245 | | | | | 250 | | | | | 255 |
| | | | | | | | | | | | | | | |
| Lys | Gly | Gln | Thr | Ala | Leu | Gly | Phe | Leu | Tyr | Ala | Ser | Gly | Leu | Gly |
| | | | | 260 | | | | | 265 | | | | | 270 |
| | | | | | | | | | | | | | | |
| Val | Asn | Ser | Ser | Gln | Ala | Lys | Ala | Leu | Val | Tyr | Tyr | Thr | Phe | Gly |
| | | | | 275 | | | | | 280 | | | | | 285 |
| | | | | | | | | | | | | | | |
| Ala | Leu | Gly | Gly | Asn | Leu | Ile | Ala | His | Met | Val | Leu | Val | Ser | Arg |
| | | | | 290 | | | | | 295 | | | | | 300 |

Leu

<210> 116
 <211> 584
 <212> DNA
 <213> Homo sapiens

<400> 116
 cttcccagcc ctgtgcccc aagcacctgg agcatatagc cttgcagaac 50
 ttctacttgc ctgcctccct gcctctggcc atggcctgcc ggtgcctcag 100
 cttccttctg atggggacct tcctgtcagt tttccagaca gtcctggccc 150
 agctggatgc actgctggtc ttcccaggcc aagtggctca actctcctgc 200
 acgctcagcc cccagcacgt caccatcagg gactacgggtg tgtcctggta 250
 ccagcagcgg gcaggcagtg cccctcgata tctcctctac taccgctcgg 300
 aggaggatca ccaccggcct gctgacatcc ccgatcgatt ctcggcagcc 350
 aaggatgagg cccacaatgc ctgtgtcctc accattagtc ccgtgcagcc 400
 tgaagacgac gcggattact actgctctgt tggctacggc tttagtcctt 450
 aggggtgggg tgtgagatgg gtgcctcccc tctgcctccc atttctgccc 500
 ctgaccttgg gtccctttta aactttctct gagccttgct tcccctctgt 550
 aaaatggggtt aataatattc aacatgtcaa caac 584

<210> 117
 <211> 123
 <212> PRT
 <213> Homo sapiens

<400> 117
 Met Ala Cys Arg Cys Leu Ser Phe Leu Leu Met Gly Thr Phe Leu
 1 5 10 15
 Ser Val Ser Gln Thr Val Leu Ala Gln Leu Asp Ala Leu Leu Val
 20 25 30

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Pro | Gly | Gln | Val | Ala | Gln | Leu | Ser | Cys | Thr | Leu | Ser | Pro | Gln |
| | | | | 35 | | | | | 40 | | | | | 45 |
| His | Val | Thr | Ile | Arg | Asp | Tyr | Gly | Val | Ser | Trp | Tyr | Gln | Gln | Arg |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ala | Gly | Ser | Ala | Pro | Arg | Tyr | Leu | Leu | Tyr | Tyr | Arg | Ser | Glu | Glu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Asp | His | His | Arg | Pro | Ala | Asp | Ile | Pro | Asp | Arg | Phe | Ser | Ala | Ala |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Lys | Asp | Glu | Ala | His | Asn | Ala | Cys | Val | Leu | Thr | Ile | Ser | Pro | Val |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Gln | Pro | Glu | Asp | Asp | Ala | Asp | Tyr | Tyr | Cys | Ser | Val | Gly | Tyr | Gly |
| | | | | 110 | | | | | 115 | | | | | 120 |

Phe Ser Pro

<210> 118
 <211> 3402
 <212> DNA
 <213> Homo sapiens

<400> 118
 gccgccccgc cccgagaccg ggccccgggg cgcggggcg cgggatgcgg 50
 cgccccggggc ggcgatgacc gcggagcgca cgccgcgggc ccggccctga 100
 ccccgccgcc cgcccgtga gcccccgcc gaggtccgga caggccgaga 150
 tgacgccgag cccctgttg ctgctcctgc tgccgccgct gctgctgggg 200
 gccttccac cgccgcgcgc cgcccgaggc ccccaaaga tggcggaaca 250
 ggtggtccca cggcaggtgg ccgggtggg ccgcactgtg cggctgcagt 300
 gccagtga gggggaccgc ccgcgctga ccatgtggac caaggatggc 350
 cgcaccatcc acagcggctg gagccgcttc cgctgctgc cgcaggggct 400
 gaaggtgaag caggtggagc gggaggatgc cggcgtgtac gtgtgcaagg 450
 ccaccaacgg cttcggcagc ctgagcgtca actacaccct cgtcgtgctg 500
 gatgacatta gcccgaggaa ggagagcctg gggcccgaca gtcctctgg 550
 gggtaagag gaccccgcca gccagcagtg ggcacgaccg cgcttcacac 600
 agccctcaa gatgaggcgc cgggtgatcg caggccccgt gggtagctcc 650
 gtgcggctca agtgcgctggc cagcgggcac cctcgggccg acatcacgtg 700
 gatgaaggac gaccaggcct tgacgcgccc agaggccgct gagcccagga 750

agaagaagtg gacactgagc ctgaagaacc tgcggccgga ggacagcggc 800
aaatacacct gccgcgtgtc gaaccgcgcg ggcgccatca acgccaccta 850
caaggtggat gtgatccagc ggacccgttc caagcccgtg ctcacaggca 900
cgcaccccgt gaacacgacg gtggacttcg gggggaccac gtccttccag 950
tgcaaggtgc gcagcgacgt gaagccggtg atccagtggc tgaagcgcgt 1000
ggagtacggc gccgagggcc gccacaactc caccatcgat gtgggcggcc 1050
agaagtttgt ggtgctgccc acgggtgacg tgtggtcgcg gcccgacggc 1100
tcctacctca ataagctgct catcacccgt gcccgccagg acgatgcggg 1150
catgtacatc tgccttggcg ccaacaccat gggctacagc ttccgcagcg 1200
ccttcctcac cgtgctgcca gacccaaaac cgccagggcc acctgtggcc 1250
tcctcgctct cgccactag cctgcctggtg cccgtggtca tcggcatccc 1300
agccggcgct gtcttcatcc tgggcaccct gtcctgtgg ctttgccagg 1350
cccagaagaa gccgtgcacc cccgcgcctg cccctcccct gcctgggcac 1400
cgcccgcggg ggacggcccg cgaccgcagc ggagacaagg accttccctc 1450
gttggccgcc ctcagcgctg gccctggtgt ggggctgtgt gaggagcatg 1500
ggtctccggc agccccccag cacttactgg gcccagggcc agttgctggc 1550
cctaagttgt accccaaact ctacacagac atccacacac acacacacac 1600
acactctcac acacactcac acgtggaggg caaggtccac cagcacatcc 1650
actatcagtg ctagacggca ccgtatctgc agtgggcacg ggggggcccg 1700
ccagacaggc agactgggag gatggaggac ggagctgcag acgaaggcag 1750
gggacccatg gcgaggagga atggccagca cccaggcag tctgtgtgtg 1800
aggcatagcc cctggacaca cacacacaga cacacacact acctggatgc 1850
atgtatgcac acacatgcgc gcacacgtgc tcctgaagg cacacgtacg 1900
cacacgcaca tgcacagata tgccgcctgg gcacacagat aagctgcccc 1950
aatgcacgca cacgcacaga gacatgccag aacatacaag gacatgctgc 2000
ctgaacatac acacgcacac ccatgcgcag atgtgctgcc tggacacaca 2050
cacacacacg gatatgctgt ctggacgcac acacgtgcag atatggtatc 2100
cggacacaca cgtgcacaga tatgctgcct ggacacacag ataatgctgc 2150

cttgacacac acatgcacgg atattgcctg gacacacaca cacacacacg 2200
cgtgcacaga tatgctgtct ggacacgcac acacatgcag atatgctgcc 2250
tggaacacaca cttccagaca cacgtgcaca ggcgcagata tgctgcctgg 2300
acacacgcag atatgctgtc tagtcacaca cacacgcaga catgctgtcc 2350
ggacacacac acgcatgcac agatatgctg tccggacaca cacacgcacg 2400
cagatatgct gcctggacac acacacagat aatgctgcct caacactcac 2450
acacgtgcag atattgcctg gacacacaca tgtgcacaga tatgctgtct 2500
ggacatgcac acacgtgcag atatgctgtc cggatacaca cgcacgcaca 2550
catgcagata tgctgcctgg gcacacactt ccggacacac atgcacacac 2600
aggtgcagat atgctgcctg gacacacaca cagataatgc tgcctcaaca 2650
ctcacacacg tgcagatatt gcctggacac acacatgtgc acagatatgc 2700
tgtctggaca tgcacacacg tgcagatatg ctgtccggat acacacgcac 2750
gcacacatgc agatatgctg cctgggcaca cacttccgga cacacatgca 2800
cacacaggtg cagatatgct gcctggacac acgcagactg acgtgctttt 2850
gggaggggtgt gccgtgaagc ctgcagtagc tgtgccgtga ggctcatagt 2900
tgatgagga ctttccctgc tccaccgtca ctccccaac tctgcccgcc 2950
tctgtccccg cctcagtccc cgctccatc cccgcctctg tcccctggcc 3000
ttggcggcta tttttgccac ctgccttggg tgcccaggag tcccctactg 3050
ctgtgggctg gggttggggg cacagcagcc ccaagcctga gaggctggag 3100
cccatggcta gtggctcatc cccagtgcac tctccccctg acacagagaa 3150
ggggccttgg tatttatatt taagaaatga agataatatt aataatgatg 3200
gaaggaagac tgggttgcag ggactgtggt ctctcctggg gcccgggacc 3250
cgctggtct ttcagccatg ctgatgacca caccctgcc aggccagaca 3300
ccacccccca cccactgtc gtggtggccc cagatctctg taattttatg 3350
tagagtttga gctgaagccc cgtatattta atttattttg ttaaacacaa 3400

aa 3402

<210> 119

<211> 504

<212> PRT

<213> Homo sapiens

<400> 119

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Thr | Pro | Ser | Pro | Leu | Leu | Leu | Leu | Leu | Leu | Pro | Pro | Leu | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Gly | Ala | Phe | Pro | Pro | Ala | Ala | Ala | Ala | Arg | Gly | Pro | Pro | Lys |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Met | Ala | Asp | Lys | Val | Val | Pro | Arg | Gln | Val | Ala | Arg | Leu | Gly | Arg |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Thr | Val | Arg | Leu | Gln | Cys | Pro | Val | Glu | Gly | Asp | Pro | Pro | Pro | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Thr | Met | Trp | Thr | Lys | Asp | Gly | Arg | Thr | Ile | His | Ser | Gly | Trp | Ser |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Arg | Phe | Arg | Val | Leu | Pro | Gln | Gly | Leu | Lys | Val | Lys | Gln | Val | Glu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Arg | Glu | Asp | Ala | Gly | Val | Tyr | Val | Cys | Lys | Ala | Thr | Asn | Gly | Phe |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Gly | Ser | Leu | Ser | Val | Asn | Tyr | Thr | Leu | Val | Val | Leu | Asp | Asp | Ile |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Ser | Pro | Gly | Lys | Glu | Ser | Leu | Gly | Pro | Asp | Ser | Ser | Ser | Gly | Gly |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Gln | Glu | Asp | Pro | Ala | Ser | Gln | Gln | Trp | Ala | Arg | Pro | Arg | Phe | Thr |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Gln | Pro | Ser | Lys | Met | Arg | Arg | Arg | Val | Ile | Ala | Arg | Pro | Val | Gly |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ser | Ser | Val | Arg | Leu | Lys | Cys | Val | Ala | Ser | Gly | His | Pro | Arg | Pro |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Asp | Ile | Thr | Trp | Met | Lys | Asp | Asp | Gln | Ala | Leu | Thr | Arg | Pro | Glu |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Ala | Ala | Glu | Pro | Arg | Lys | Lys | Lys | Trp | Thr | Leu | Ser | Leu | Lys | Asn |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Leu | Arg | Pro | Glu | Asp | Ser | Gly | Lys | Tyr | Thr | Cys | Arg | Val | Ser | Asn |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Arg | Ala | Gly | Ala | Ile | Asn | Ala | Thr | Tyr | Lys | Val | Asp | Val | Ile | Gln |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Arg | Thr | Arg | Ser | Lys | Pro | Val | Leu | Thr | Gly | Thr | His | Pro | Val | Asn |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Thr | Thr | Val | Asp | Phe | Gly | Gly | Thr | Thr | Ser | Phe | Gln | Cys | Lys | Val |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Arg | Ser | Asp | Val | Lys | Pro | Val | Ile | Gln | Trp | Leu | Lys | Arg | Val | Glu |
| | | | | 275 | | | | | 280 | | | | | 285 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Tyr | Gly | Ala | Glu | Gly | Arg | His | Asn | Ser | Thr | Ile | Asp | Val | Gly | Gly | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Gln | Lys | Phe | Val | Val | Leu | Pro | Thr | Gly | Asp | Val | Trp | Ser | Arg | Pro | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Asp | Gly | Ser | Tyr | Leu | Asn | Lys | Leu | Leu | Ile | Thr | Arg | Ala | Arg | Gln | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Asp | Asp | Ala | Gly | Met | Tyr | Ile | Cys | Leu | Gly | Ala | Asn | Thr | Met | Gly | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Tyr | Ser | Phe | Arg | Ser | Ala | Phe | Leu | Thr | Val | Leu | Pro | Asp | Pro | Lys | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Pro | Pro | Gly | Pro | Pro | Val | Ala | Ser | Ser | Ser | Ser | Ala | Thr | Ser | Leu | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Pro | Trp | Pro | Val | Val | Ile | Gly | Ile | Pro | Ala | Gly | Ala | Val | Phe | Ile | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Leu | Gly | Thr | Leu | Leu | Leu | Trp | Leu | Cys | Gln | Ala | Gln | Lys | Lys | Pro | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Cys | Thr | Pro | Ala | Pro | Ala | Pro | Pro | Leu | Pro | Gly | His | Arg | Pro | Pro | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Gly | Thr | Ala | Arg | Asp | Arg | Ser | Gly | Asp | Lys | Asp | Leu | Pro | Ser | Leu | |
| | | | | 425 | | | | | 430 | | | | | 435 | |
| Ala | Ala | Leu | Ser | Ala | Gly | Pro | Gly | Val | Gly | Leu | Cys | Glu | Glu | His | |
| | | | | 440 | | | | | 445 | | | | | 450 | |
| Gly | Ser | Pro | Ala | Ala | Pro | Gln | His | Leu | Leu | Gly | Pro | Gly | Pro | Val | |
| | | | | 455 | | | | | 460 | | | | | 465 | |
| Ala | Gly | Pro | Lys | Leu | Tyr | Pro | Lys | Leu | Tyr | Thr | Asp | Ile | His | Thr | |
| | | | | 470 | | | | | 475 | | | | | 480 | |
| His | Thr | His | Thr | His | Ser | His | Thr | His | Ser | His | Val | Glu | Gly | Lys | |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Val | His | Gln | His | Ile | His | Tyr | Gln | Cys | | | | | | | |
| | | | | 500 | | | | | | | | | | | |

<210> 120

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 120

cgagatgacg ccgagccccc 20

<210> 121
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 121
cggttcgaca cgcggcaggt g 21

<210> 122
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 122
tgctgctcct gctgccgccg ctgctgctgg gggccttccc gccgg 45

<210> 123
<211> 4420
<212> DNA
<213> Homo sapiens

<400> 123
cccagctgag gagccctgct caagacacgg tctactggatc tgagaaactt 50
cccagggggac cgcattccag agtcagtgac tctgtgaagc acccacatct 100
acctcttgcc acgttcccac gggcttgggg gaaagatggt ggggaccaag 150
gcctgggtgt tctccttcct ggtcctggaa gtcacatctg tgttggggag 200
acagacgatg ctcaccagc cagtaagaag agtccagcct gggaagaaga 250
acccagcat ctttgccaag cctgccgaca ccctggagag ccctggtgag 300
tggaacaacat ggttcaacat cgactacca ggcgggaagg gcgactatga 350
gcggctggac gccattcgct tctactatgg ggaccgtgta tgtgcccgtc 400
ccctgcggtc agaggctcgg accactgact ggacacctgc gggcagcact 450
ggccaggtgg tccatggtag tccccgtgag ggtttctggt gcctcaacag 500
ggagcagcgg cctggccaga actgctctaa ttacaccgta cgcttcctct 550
gcccaccagg atccctgcgc cgagacacag agcgcatctg gagcccatgg 600
tctccctgga gcaagtgtc agctgcctgt ggtcagactg gggccagac 650
tcgcacacgc atttgcttgg cagagatggt gtcgctgtgc agtgaggcca 700
gcgaagaggg tcagcactgc atgggccagg actgtacagc ctgtgacctg 750

acctgccc aa tgggccaggt gaatgctgac tgtgatgcct gcatgtgcca 800
ggacttcatg cttcatgggg ctgtctccct tcccggaggt gcccagcct 850
caggggctgc tatctacctc ctgaccaaga cgccgaagct gctgaccag 900
acagacagtg atgggagatt ccgaatccct ggcttgtgcc ctgatggcaa 950
aagcatcctg aagatcaca aggtcaagtt tgccccatt gtactcaca 1000
tgccaagac tagcctgaag gcagccacca tcaaggcaga gtttgtgagg 1050
gcagagactc catacatggt gatgaacct gagacaaaag cacggagagc 1100
tgggcagagc gtgtctctgt gctgtaaggc cacagggaag cccaggccag 1150
acaagtat tttt ttggtatcat aatgacacat tgctggatcc ttcctctac 1200
aagcatgaga gcaagctggt gctgaggaaa ctgcagcagc accaggctgg 1250
ggagtacttt tgcaaggccc agagtgatgc tggggctgtg aagtccaagg 1300
ttgccagct gattgtcaca gcatctgatg agactccttg caaccagtt 1350
cctgagagct atcttatccg gctgccccat gattgctttc agaatgccac 1400
caactcctt tactatgacg tgggacgctg ccctgttaag acttgtgcag 1450
ggcagcagga taatgggatc aggtgccgtg atgctgtgca gaactgctgt 1500
ggcatctcca agacagagga aaggagatc cagtgcagtg gctacacgct 1550
accaccaag gtggccaagg agtgcagctg ccagcgggtg acggaaactc 1600
ggagcatcgt gcggggccgt gtcagtgtg ctgacaatgg ggagcccatg 1650
cgctttggcc atgtgtacat ggggaacagc cgtgtaagca tgactggcta 1700
caagggcact ttcacctc atgtcccca ggacactgag aggctggtgc 1750
tcacatttgt ggacaggctg cagaagtttg tcaacaccac caaagtgcta 1800
cctttcaaca agaaggggag tgccgtgttc catgaaatca agatgcttcg 1850
tcggaaagag cccatcactt tggaagccat ggagaccaac atcatcccc 1900
tgggggaagt ggttgggtgaa gaccccatgg ctgaactgga gattccatcc 1950
aggagtttct acaggcagaa tggggagccc tacataggaa aagtgaaggc 2000
cagtgtgacc ttcctggatc cccggaatat ttccacagcc acagctgccc 2050
agactgacct gaacttcac aatgacgaag gagacacttt ccccttcgg 2100
acgtatggca tgttctctgt ggacttcaga gatgaggtca cctcagagcc 2150

acttaatgct ggcaaagtga aggtccacct tgactcgacc caggtcaaga 2200
tgccagagca catatccaca gtgaaactct ggtcactcaa tccagacaca 2250
gggctgtggg aggaggaagg tgatttcaaa ttgaaaatc aaaggaggaa 2300
caaaagagaa gacagaacct tcctgggtggg caacctggag attcgtgaga 2350
ggaggctctt taacctggat gttcctgaaa gcaggcgggtg ctttgttaag 2400
gtgagggcct accggagtga gaggttcttg cctagtgagc agatccaggg 2450
ggttgtgatc tccgtgatta acctggagcc tagaactggc ttcttgtcca 2500
acctagggc ctggggccgc tttgacagtg tcatcacagg cccaacggg 2550
gcctgtgtgc ctgccttctg tgatgaccag tccctgatg cctactctgc 2600
ctatgtcttg gcaagcctgg ctggggagga actgcaagca gtggagtctt 2650
ctcctaaatt caacccaaat gcaattggcg tccctcagcc ctatctcaac 2700
aagctcaact accgtcggac ggaccatgag gatccacggg ttaaaaagac 2750
agctttccag attagcatgg ccaagccaag gcccaactca gctgaggaga 2800
gcaatgggcc catctatgcc tttgagaacc tccgggcatg tgaagaggca 2850
ccaccagtg cagcccactt cgggttctac cagattgagg gggatcgata 2900
tgactacaac acagtccct tcaacgaaga tgaccctatg agctggactg 2950
aagactatct ggcatggtgg ccaaagccga tggaattcag ggctgtctat 3000
atcaagggtga agattgtggg gccactggaa gtgaatgtgc gatcccgcaa 3050
catggggggc actcatcggc ggacagtggg gaagctgtat ggaatccgag 3100
atgtgaggag cactcgggac agggaccagc ccaatgtctc agctgcctgt 3150
ctggagttca agtgcagtgg gatgctctat gatcaggacc gtgtggaccg 3200
caccctggtg aaggatcatc ccagggcag ctgccgtcga gccagtgtga 3250
acccatgct gcatgagtac ctggtcaacc acttgccact tgcagtcaac 3300
aacgacacca gtgagtacac catgctggca cccttgacc cactgggcca 3350
caactatggc atctacactg tcaactgacca ggaccctcgc acggccaagg 3400
agatcgcgct cggccggtgc tttgatggca catccgatgg ctctccaga 3450
atcatgaaga gcaatgtggg agtagccctc accttcaact gtgtagagag 3500
gcaagtaggc cgccagagtg ccttcagta cctccaaagc acccagccc 3550
agtcccctgc tgcaggcact gtccaaggaa gagtgcctc gaggaggcag 3600

cagcgagcga gcaggggtgg ccagcgccag ggtggagtgg tggcctctct 3650
gagatttcct agagttgctc aacagcccct gatcaactaa gttttgtggt 3700
acttcaccct cttctgccct catttcatgt gacagccatt gtgagactga 3750
tgcacaaact gtcacttggt taatttaagc acttctgttt tcgtgaattt 3800
gcttgtttgt ttcttcatgc ctttacttac tttgtcccat gctactgatt 3850
ggcacgtggc cccacaaatg gcacaataaa gcccctttgt gaaactgttc 3900
tttaaataaa acacaagaaa ttggccactg gtaaaactct gcagcttcaa 3950
ctgtacttca tttaatgcca ttaatgcaaa tatacttcct cttctttttg 4000
catggttttg cccacctctg caatagtgat aatctgatgc tgaagatcaa 4050
ataaccaata taaagcatat ttcttggcct tgctccacag gacataggca 4100
agccttgatc atagttcata catataaatg gtgggtgaaat aaagaaataa 4150
aacacaatac ttttacttga aatgtaaata acttatttat ttctttgcta 4200
aatttggaaat tctagtgcac attcaaagtt aagctattaa atataggggtg 4250
atcatagtgc ctctaccaag tctggaaaga acatctcctg gtatccacaa 4300
ttacaccagg ttgctaactg tatttgtaca tttccctttg cattcgcttt 4350
tgttcttgct agaaaccagc tgtagcccag ggcagatgtc aataaatgca 4400
tactctgtat ttcgaaaaaa 4420

<210> 124

<211> 1184

<212> PRT

<213> Homo sapiens

<400> 124

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Gly | Thr | Lys | Ala | Trp | Val | Phe | Ser | Phe | Leu | Val | Leu | Glu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Val | Thr | Ser | Val | Leu | Gly | Arg | Gln | Thr | Met | Leu | Thr | Gln | Ser | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Arg | Arg | Val | Gln | Pro | Gly | Lys | Lys | Asn | Pro | Ser | Ile | Phe | Ala | Lys |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Pro | Ala | Asp | Thr | Leu | Glu | Ser | Pro | Gly | Glu | Trp | Thr | Thr | Trp | Phe |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Asn | Ile | Asp | Tyr | Pro | Gly | Gly | Lys | Gly | Asp | Tyr | Glu | Arg | Leu | Asp |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ala | Ile | Arg | Phe | Tyr | Tyr | Gly | Asp | Arg | Val | Cys | Ala | Arg | Pro | Leu |

| 80 | | | | | 85 | | | | | 90 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Leu | Glu | Ala | Arg | Thr | Thr | Asp | Trp | Thr | Pro | Ala | Gly | Ser | Thr |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Gly | Gln | Val | Val | His | Gly | Ser | Pro | Arg | Glu | Gly | Phe | Trp | Cys | Leu |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Asn | Arg | Glu | Gln | Arg | Pro | Gly | Gln | Asn | Cys | Ser | Asn | Tyr | Thr | Val |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Arg | Phe | Leu | Cys | Pro | Pro | Gly | Ser | Leu | Arg | Arg | Asp | Thr | Glu | Arg |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Ile | Trp | Ser | Pro | Trp | Ser | Pro | Trp | Ser | Lys | Cys | Ser | Ala | Ala | Cys |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Gly | Gln | Thr | Gly | Val | Gln | Thr | Arg | Thr | Arg | Ile | Cys | Leu | Ala | Glu |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Met | Val | Ser | Leu | Cys | Ser | Glu | Ala | Ser | Glu | Glu | Gly | Gln | His | Cys |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Met | Gly | Gln | Asp | Cys | Thr | Ala | Cys | Asp | Leu | Thr | Cys | Pro | Met | Gly |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Gln | Val | Asn | Ala | Asp | Cys | Asp | Ala | Cys | Met | Cys | Gln | Asp | Phe | Met |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Leu | His | Gly | Ala | Val | Ser | Leu | Pro | Gly | Gly | Ala | Pro | Ala | Ser | Gly |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Ala | Ala | Ile | Tyr | Leu | Leu | Thr | Lys | Thr | Pro | Lys | Leu | Leu | Thr | Gln |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Thr | Asp | Ser | Asp | Gly | Arg | Phe | Arg | Ile | Pro | Gly | Leu | Cys | Pro | Asp |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Gly | Lys | Ser | Ile | Leu | Lys | Ile | Thr | Lys | Val | Lys | Phe | Ala | Pro | Ile |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Val | Leu | Thr | Met | Pro | Lys | Thr | Ser | Leu | Lys | Ala | Ala | Thr | Ile | Lys |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Ala | Glu | Phe | Val | Arg | Ala | Glu | Thr | Pro | Tyr | Met | Val | Met | Asn | Pro |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Glu | Thr | Lys | Ala | Arg | Arg | Ala | Gly | Gln | Ser | Val | Ser | Leu | Cys | Cys |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Lys | Ala | Thr | Gly | Lys | Pro | Arg | Pro | Asp | Lys | Tyr | Phe | Trp | Tyr | His |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Asn | Asp | Thr | Leu | Leu | Asp | Pro | Ser | Leu | Tyr | Lys | His | Glu | Ser | Lys |
| | | | | 350 | | | | | 355 | | | | | 360 |
| Leu | Val | Leu | Arg | Lys | Leu | Gln | Gln | His | Gln | Ala | Gly | Glu | Tyr | Phe |

| | | | | | |
|---|-----|--|-----|--|-----|
| | 365 | | 370 | | 375 |
| Cys Lys Ala Gln Ser Asp Ala Gly Ala Val Lys Ser Lys Val Ala | 380 | | 385 | | 390 |
| Gln Leu Ile Val Thr Ala Ser Asp Glu Thr Pro Cys Asn Pro Val | 395 | | 400 | | 405 |
| Pro Glu Ser Tyr Leu Ile Arg Leu Pro His Asp Cys Phe Gln Asn | 410 | | 415 | | 420 |
| Ala Thr Asn Ser Phe Tyr Tyr Asp Val Gly Arg Cys Pro Val Lys | 425 | | 430 | | 435 |
| Thr Cys Ala Gly Gln Gln Asp Asn Gly Ile Arg Cys Arg Asp Ala | 440 | | 445 | | 450 |
| Val Gln Asn Cys Cys Gly Ile Ser Lys Thr Glu Glu Arg Glu Ile | 455 | | 460 | | 465 |
| Gln Cys Ser Gly Tyr Thr Leu Pro Thr Lys Val Ala Lys Glu Cys | 470 | | 475 | | 480 |
| Ser Cys Gln Arg Cys Thr Glu Thr Arg Ser Ile Val Arg Gly Arg | 485 | | 490 | | 495 |
| Val Ser Ala Ala Asp Asn Gly Glu Pro Met Arg Phe Gly His Val | 500 | | 505 | | 510 |
| Tyr Met Gly Asn Ser Arg Val Ser Met Thr Gly Tyr Lys Gly Thr | 515 | | 520 | | 525 |
| Phe Thr Leu His Val Pro Gln Asp Thr Glu Arg Leu Val Leu Thr | 530 | | 535 | | 540 |
| Phe Val Asp Arg Leu Gln Lys Phe Val Asn Thr Thr Lys Val Leu | 545 | | 550 | | 555 |
| Pro Phe Asn Lys Lys Gly Ser Ala Val Phe His Glu Ile Lys Met | 560 | | 565 | | 570 |
| Leu Arg Arg Lys Glu Pro Ile Thr Leu Glu Ala Met Glu Thr Asn | 575 | | 580 | | 585 |
| Ile Ile Pro Leu Gly Glu Val Val Gly Glu Asp Pro Met Ala Glu | 590 | | 595 | | 600 |
| Leu Glu Ile Pro Ser Arg Ser Phe Tyr Arg Gln Asn Gly Glu Pro | 605 | | 610 | | 615 |
| Tyr Ile Gly Lys Val Lys Ala Ser Val Thr Phe Leu Asp Pro Arg | 620 | | 625 | | 630 |
| Asn Ile Ser Thr Ala Thr Ala Ala Gln Thr Asp Leu Asn Phe Ile | 635 | | 640 | | 645 |
| Asn Asp Glu Gly Asp Thr Phe Pro Leu Arg Thr Tyr Gly Met Phe | | | | | |

| | | |
|-------------------------------------|-------------------------|-----|
| 650 | 655 | 660 |
| Ser Val Asp Phe Arg Asp Glu Val Thr | Ser Glu Pro Leu Asn Ala | |
| 665 | 670 | 675 |
| Gly Lys Val Lys Val His Leu Asp Ser | Thr Gln Val Lys Met Pro | |
| 680 | 685 | 690 |
| Glu His Ile Ser Thr Val Lys Leu Trp | Ser Leu Asn Pro Asp Thr | |
| 695 | 700 | 705 |
| Gly Leu Trp Glu Glu Glu Gly Asp Phe | Lys Phe Glu Asn Gln Arg | |
| 710 | 715 | 720 |
| Arg Asn Lys Arg Glu Asp Arg Thr Phe | Leu Val Gly Asn Leu Glu | |
| 725 | 730 | 735 |
| Ile Arg Glu Arg Arg Leu Phe Asn Leu | Asp Val Pro Glu Ser Arg | |
| 740 | 745 | 750 |
| Arg Cys Phe Val Lys Val Arg Ala Tyr | Arg Ser Glu Arg Phe Leu | |
| 755 | 760 | 765 |
| Pro Ser Glu Gln Ile Gln Gly Val Val | Ile Ser Val Ile Asn Leu | |
| 770 | 775 | 780 |
| Glu Pro Arg Thr Gly Phe Leu Ser Asn | Pro Arg Ala Trp Gly Arg | |
| 785 | 790 | 795 |
| Phe Asp Ser Val Ile Thr Gly Pro Asn | Gly Ala Cys Val Pro Ala | |
| 800 | 805 | 810 |
| Phe Cys Asp Asp Gln Ser Pro Asp Ala | Tyr Ser Ala Tyr Val Leu | |
| 815 | 820 | 825 |
| Ala Ser Leu Ala Gly Glu Glu Leu Gln | Ala Val Glu Ser Ser Pro | |
| 830 | 835 | 840 |
| Lys Phe Asn Pro Asn Ala Ile Gly Val | Pro Gln Pro Tyr Leu Asn | |
| 845 | 850 | 855 |
| Lys Leu Asn Tyr Arg Arg Thr Asp His | Glu Asp Pro Arg Val Lys | |
| 860 | 865 | 870 |
| Lys Thr Ala Phe Gln Ile Ser Met Ala | Lys Pro Arg Pro Asn Ser | |
| 875 | 880 | 885 |
| Ala Glu Glu Ser Asn Gly Pro Ile Tyr | Ala Phe Glu Asn Leu Arg | |
| 890 | 895 | 900 |
| Ala Cys Glu Glu Ala Pro Pro Ser Ala | Ala His Phe Arg Phe Tyr | |
| 905 | 910 | 915 |
| Gln Ile Glu Gly Asp Arg Tyr Asp Tyr | Asn Thr Val Pro Phe Asn | |
| 920 | 925 | 930 |
| Glu Asp Asp Pro Met Ser Trp Thr Glu | Asp Tyr Leu Ala Trp Trp | |

| 935 | | | | | 940 | | | | | 945 | | | | |
|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-----|-----|-----|-----|------|
| Pro | Lys | Pro | Met | Glu | Phe | Arg | Ala | Cys | Tyr | Ile | Lys | Val | Lys | Ile |
| | | | | 950 | | | | | 955 | | | | | 960 |
| Val | Gly | Pro | Leu | Glu | Val | Asn | Val | Arg | Ser | Arg | Asn | Met | Gly | Gly |
| | | | | 965 | | | | | 970 | | | | | 975 |
| Thr | His | Arg | Arg | Thr | Val | Gly | Lys | Leu | Tyr | Gly | Ile | Arg | Asp | Val |
| | | | | 980 | | | | | 985 | | | | | 990 |
| Arg | Ser | Thr | Arg | Asp | Arg | Asp | Gln | Pro | Asn | Val | Ser | Ala | Ala | Cys |
| | | | | 995 | | | | | 1000 | | | | | 1005 |
| Leu | Glu | Phe | Lys | Cys | Ser | Gly | Met | Leu | Tyr | Asp | Gln | Asp | Arg | Val |
| | | | | 1010 | | | | | 1015 | | | | | 1020 |
| Asp | Arg | Thr | Leu | Val | Lys | Val | Ile | Pro | Gln | Gly | Ser | Cys | Arg | Arg |
| | | | | 1025 | | | | | 1030 | | | | | 1035 |
| Ala | Ser | Val | Asn | Pro | Met | Leu | His | Glu | Tyr | Leu | Val | Asn | His | Leu |
| | | | | 1040 | | | | | 1045 | | | | | 1050 |
| Pro | Leu | Ala | Val | Asn | Asn | Asp | Thr | Ser | Glu | Tyr | Thr | Met | Leu | Ala |
| | | | | 1055 | | | | | 1060 | | | | | 1065 |
| Pro | Leu | Asp | Pro | Leu | Gly | His | Asn | Tyr | Gly | Ile | Tyr | Thr | Val | Thr |
| | | | | 1070 | | | | | 1075 | | | | | 1080 |
| Asp | Gln | Asp | Pro | Arg | Thr | Ala | Lys | Glu | Ile | Ala | Leu | Gly | Arg | Cys |
| | | | | 1085 | | | | | 1090 | | | | | 1095 |
| Phe | Asp | Gly | Thr | Ser | Asp | Gly | Ser | Ser | Arg | Ile | Met | Lys | Ser | Asn |
| | | | | 1100 | | | | | 1105 | | | | | 1110 |
| Val | Gly | Val | Ala | Leu | Thr | Phe | Asn | Cys | Val | Glu | Arg | Gln | Val | Gly |
| | | | | 1115 | | | | | 1120 | | | | | 1125 |
| Arg | Gln | Ser | Ala | Phe | Gln | Tyr | Leu | Gln | Ser | Thr | Pro | Ala | Gln | Ser |
| | | | | 1130 | | | | | 1135 | | | | | 1140 |
| Pro | Ala | Ala | Gly | Thr | Val | Gln | Gly | Arg | Val | Pro | Ser | Arg | Arg | Gln |
| | | | | 1145 | | | | | 1150 | | | | | 1155 |
| Gln | Arg | Ala | Ser | Arg | Gly | Gly | Gln | Arg | Gln | Gly | Gly | Val | Val | Ala |
| | | | | 1160 | | | | | 1165 | | | | | 1170 |
| Ser | Leu | Arg | Phe | Pro | Arg | Val | Ala | Gln | Gln | Pro | Leu | Ile | Asn | |
| | | | | 1175 | | | | | 1180 | | | | | |

<210> 125

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 125
ctggtgcctc aacagggagc ag 22

<210> 126
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 126
ccattgtgca ggtcaggtca cag 23

<210> 127
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 127
ctggagcaag tgctcagctg cctgtggtca gactgggggc 40

<210> 128
<211> 2819
<212> DNA
<213> Homo sapiens

<400> 128
ctgcaagttg ttaacgccta acacacaagt atgttaggct tccaccaaag 50

tcctcaatat acctgaatac gcacaatatc ttaactcttc atatttggtt 100

ttgggatctg ctttgaggtc ccatcttcat ttaaaaaaaaa atacagagac 150

ctacctaccg gtacgcatac atacatatgt gtatatatat gtaaactaga 200

caaagatcgc agatcataaa gcaagctctg ctttagtttc caagaagatt 250

acaaagaatt tagagatgta tttgtcaaga tcctgtcga ttcatgccct 300

ttgggttacg gtgtcctcag tgatgcagcc ctaccctttg gtttggggac 350

attatgattt gtgtaagact cagatttaca cggaagaagg gaaagtttgg 400

gattacatgg cctgccagcc ggaatccacg gacatgacaa aatatctgaa 450

agtgaaactc gatcctccgg atattacctg tggagaccct cctgagacgt 500

tctgtgcaat gggcaatccc tacatgtgca ataatgagtg tgatgcgagt 550

acccttgagc tggcacaccc ccctgagctg atgtttgatt ttgaaggaag 600

acatccctcc acattttggc agtctgccac ttggaaggag tatcccaagc 650

ctctccaggt taacatcact ctgtcttgga gcaaaacat tgagctaaca 700
gacaacatag ttattacctt tgaatctggg cgtccagacc aaatgatcct 750
ggagaagtct ctcgattatg gacgaacatg gcagccctat cagtattatg 800
ccacagactg cttagatgct ttccacatgg atcctaaatc cgtgaaggat 850
ttatcacagc atacggtctt agaaatcatt tgcacagaag agtactcaac 900
agggatataca acaaatagca aaataatcca ctttgaaatc aaagacaggt 950
tcgcgctttt tgctggacct cgcctacgca atatggcttc cctctacgga 1000
cagctggata caaccaagaa actcagagat ttctttacag tcacagacct 1050
gaggataagg ctgttaagac cagccgttgg ggaaatattt gtagatgagc 1100
tacacttggc acgctacttt tacgcgatct cagacataaa ggtgcgagga 1150
aggtgcaagt gtaatctcca tgccactgta tgtgtgtatg acaacagcaa 1200
attgacatgc gaatgtgagc acaacactac aggtccagac tgtgggaaat 1250
gcaagaagaa ttatcagggc cgaccttggg gtccaggctc ctatctcccc 1300
atcccaaaag gcactgcaaa tacctgtatc ccagtatatt ccagtattgg 1350
tacgaatgtc tgcgacaacg agctcctgca ctgccagaac ggaggacgt 1400
gccacaacaa cgtgcgctgc ctgtgcccgg ccgcatacac gggcatcctc 1450
tgcgagaagc tgcggtgcga ggaggctggc agctgcggct ccgactctgg 1500
ccagggcgcg ccccgcgacg gcacccagc gctgctgctg ctgaccacgc 1550
tgctgggaac cgccagcccc ctgggtgttct aggtgtcacc tccagccaca 1600
ccggacgggc ctgtgccgtg gggaagcaga cacaaccaa acatttgcta 1650
ctaacatagg aaacacacac atacagacac cccactcag acagtgtaca 1700
aactaagaag gcctaactga actaagccat atttatcacc cgtggacagc 1750
acatccgagt caagactgtt aatttctgac tccagaggag ttggcagctg 1800
ttgatattat cactgcaaat cacattgcca gctgcagagc atattgtgga 1850
ttggaaaggc tgcgacagcc ccccaaacag gaaagacaaa aaacaaacaa 1900
atcaaccgac ctaaaaacat tggctactct agcgtggtgc gccctagtag 1950
gactccgccc agtgtgtgga ccaaccaa atgcattcttt gctgtcaggt 2000
gcattgtggg cataaggaaa tctgttacaa gctgccatat tggcctgctt 2050

ccgtccctga atcccttcca acctgtgctt tagtgaacgt tgctctgtaa 2100
 ccctcggttg ttgaaagatt tctttgtctg atgttagtga tgcacatgtg 2150
 taacagcccc ctctaaaagc gcaagccagt catacccctg tatatcttag 2200
 cagcactgag tccagtgcga gcacacaccc actatacaag agtggctata 2250
 ggaaaaaaga aagtgtatct atccttttgt attcaaataga agttattttt 2300
 cttgaactac tgtaatatgt agattttttg tattattgcc aatttgtgtt 2350
 accagacaat ctgttaatgt atctaattcg aatcagcaaa gactgacatt 2400
 ttattttgtc ctctttcggt ctgttttgtt tcactgtgca gagatttctc 2450
 tgtaagggca acgaacgtgc tggcatcaaa gaatatcagt ttacatatat 2500
 aacaagtgtg ataagattcc accaaaggac attctaaatg ttttcttgtt 2550
 gctttaacac tggaagattt aaagaataaa aactcctgca taaacgattt 2600
 caggaatttg tattgcaatt tcttaagatg aaaggaacag ccaccaagca 2650
 gtttcacact cactttactg atttctgtgt ggactgagta cattcagctg 2700
 acgaatttag ttcccaggaa gatggattga tgttcactag cttggacaac 2750
 ttctgcaaaa tatgagacta tttccacttg ggaaaaatta caacagcaaa 2800
 aaaaaaaaaa aaaaaaaaaa 2819

<210> 129
 <211> 438
 <212> PRT
 <213> Homo sapiens

<400> 129
 Met Tyr Leu Ser Arg Ser Leu Ser Ile His Ala Leu Trp Val Thr
 1 5 10 15
 Val Ser Ser Val Met Gln Pro Tyr Pro Leu Val Trp Gly His Tyr
 20 25 30
 Asp Leu Cys Lys Thr Gln Ile Tyr Thr Glu Glu Gly Lys Val Trp
 35 40 45
 Asp Tyr Met Ala Cys Gln Pro Glu Ser Thr Asp Met Thr Lys Tyr
 50 55 60
 Leu Lys Val Lys Leu Asp Pro Pro Asp Ile Thr Cys Gly Asp Pro
 65 70 75
 Pro Glu Thr Phe Cys Ala Met Gly Asn Pro Tyr Met Cys Asn Asn
 80 85 90
 Glu Cys Asp Ala Ser Thr Pro Glu Leu Ala His Pro Pro Glu Leu

| | 95 | 100 | 105 |
|-----------------|---------------------|---------------------|-----|
| Met Phe Asp Phe | Glu Gly Arg His Pro | Ser Thr Phe Trp Gln | Ser |
| | 110 | 115 | 120 |
| Ala Thr Trp Lys | Glu Tyr Pro Lys Pro | Leu Gln Val Asn Ile | Thr |
| | 125 | 130 | 135 |
| Leu Ser Trp Ser | Lys Thr Ile Glu Leu | Thr Asp Asn Ile Val | Ile |
| | 140 | 145 | 150 |
| Thr Phe Glu Ser | Gly Arg Pro Asp Gln | Met Ile Leu Glu Lys | Ser |
| | 155 | 160 | 165 |
| Leu Asp Tyr Gly | Arg Thr Trp Gln Pro | Tyr Gln Tyr Tyr Ala | Thr |
| | 170 | 175 | 180 |
| Asp Cys Leu Asp | Ala Phe His Met Asp | Pro Lys Ser Val Lys | Asp |
| | 185 | 190 | 195 |
| Leu Ser Gln His | Thr Val Leu Glu Ile | Ile Cys Thr Glu Glu | Tyr |
| | 200 | 205 | 210 |
| Ser Thr Gly Tyr | Thr Thr Asn Ser Lys | Ile Ile His Phe Glu | Ile |
| | 215 | 220 | 225 |
| Lys Asp Arg Phe | Ala Leu Phe Ala Gly | Pro Arg Leu Arg Asn | Met |
| | 230 | 235 | 240 |
| Ala Ser Leu Tyr | Gly Gln Leu Asp Thr | Thr Lys Lys Leu Arg | Asp |
| | 245 | 250 | 255 |
| Phe Phe Thr Val | Thr Asp Leu Arg Ile | Arg Leu Leu Arg Pro | Ala |
| | 260 | 265 | 270 |
| Val Gly Glu Ile | Phe Val Asp Glu Leu | His Leu Ala Arg Tyr | Phe |
| | 275 | 280 | 285 |
| Tyr Ala Ile Ser | Asp Ile Lys Val Arg | Gly Arg Cys Lys Cys | Asn |
| | 290 | 295 | 300 |
| Leu His Ala Thr | Val Cys Val Tyr Asp | Asn Ser Lys Leu Thr | Cys |
| | 305 | 310 | 315 |
| Glu Cys Glu His | Asn Thr Thr Gly Pro | Asp Cys Gly Lys Cys | Lys |
| | 320 | 325 | 330 |
| Lys Asn Tyr Gln | Gly Arg Pro Trp Ser | Pro Gly Ser Tyr Leu | Pro |
| | 335 | 340 | 345 |
| Ile Pro Lys Gly | Thr Ala Asn Thr Cys | Ile Pro Ser Ile Ser | Ser |
| | 350 | 355 | 360 |
| Ile Gly Thr Asn | Val Cys Asp Asn Glu | Leu Leu His Cys Gln | Asn |
| | 365 | 370 | 375 |
| Gly Gly Thr Cys | His Asn Asn Val Arg | Cys Leu Cys Pro Ala | Ala |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| | 380 | | 385 | | 390 |
| Tyr Thr Gly Ile | Leu Cys Glu Lys Leu | Arg Cys Glu Glu Ala Gly | | | |
| | 395 | 400 | | 405 | |
| Ser Cys Gly Ser | Asp Ser Gly Gln Gly | Ala Pro Pro His Gly Thr | | | |
| | 410 | 415 | | 420 | |
| Pro Ala Leu Leu | Leu Leu Thr Thr Leu | Leu Gly Thr Ala Ser Pro | | | |
| | 425 | 430 | | 435 | |
| Leu Val Phe | | | | | |

<210> 130
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 130
 tcgattatgg acgaacatgg cagc 24

<210> 131
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 131
 ttctgagatc cctcatcctc 20

<210> 132
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 132
 aggttcaggg acagcaagtt tggg 24

<210> 133
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 133
 ttgtctggac ctcggtacg gaattggctt ccctctacgg acagctggat 50

<210> 134
<211> 1493
<212> DNA
<213> Homo sapiens

<400> 134
cccacgcgtc cgggtgacct gggccgagcc ctcccggtcg gctaagattg 50

ctgaggagggc ggggggtagc tggcaggcgc cgacttccga aggccgccgt 100

ccggggcgagg tgtctcatg acttctcttg tggaccatgt ccgtgatctt 150

ttttgcctgc gtggtacggg taagggatgg actgcccctc tcagcctcta 200

ctgattttta ccacacccaa gatttttttg aatggaggag acggctcaag 250

agtttagcct tgcgactggc ccagtatcca ggtcgagggt ctgcagaagg 300

ttgtgacttt agtatacatt ttctctcttt cggggacgtg gcctgcatgg 350

ctatctgctc ctgccagtgt ccagcagcca tggccttctg cttcctggag 400

accctgtggg ggggaattcac agcttcctat gacactacct gcattggcct 450

agcctccagg ccatacgctt ttcttgagtt tgacagcatc attcagaaag 500

tgaagtggca ttttaactat gtaagttcct ctcagatgga gtgcagcttg 550

gaaaaaattc aggaggagct caagttgcag cctccagcgg ttctcactct 600

ggaggacaca gatgtggcaa atgggggatg gaatggtcac acaccgatgc 650

acttgagacc tgctcctaata ttccgaatgg aaccagtgac agccctgggt 700

atcctctccc tcattctcaa catcatgtgt gctgccctga atctcattcg 750

aggagttcac cttgcagaac attctttaca ggatccaagg agctggttct 800

gctggttgga ccaaacctcg tgagccagcc acccctgacc caaatgagga 850

gagctctgat tctcccatcc gggagcagtg atgtcaaact tctgctgctg 900

gggaaatctc atcagcaggg agcctgtgga aaagggcatg tcagtgaaat 950

ctgggaatgg ctggattcgg aaacatctgc ccatgtgtat tgatggcaga 1000

gctgttgccc acaagcgctt ttattttagg gtaaaattaa caaatccatt 1050

ctattcctct gacccatgct tagtacatat gacctttaac ctttacattt 1100

atatgattct ggggttgctt cagaagtgtt atttcatgaa tcattcatat 1150

gatttgatcc ccaggattc tattttgttt aatgggcttt tctactaaaa 1200

gcataaaata ctgaggctga tttagtcagg gcaaaaccat ttactttaca 1250

tattcgtttt caatacttgc tgttcatggt acacaagctt cttacggttt 1300
tcttgtaaca ataaatattt tgagtaaata atgggtacat tttaacaaac 1350
tcagtagtac aacctaaact tgtataaaag tgtgtaaaaa tgtatagcca 1400
tttatatcct atgtataaat taaatgaggt ggcttcagaa atggcagaat 1450
aatctaaag tgtttattaa aaaaaaaaaa aaaaaaaaaa aag 1493

<210> 135
<211> 228
<212> PRT
<213> Homo sapiens

<400> 135
Met Ser Val Ile Phe Phe Ala Cys Val Val Arg Val Arg Asp Gly
1 5 10 15
Leu Pro Leu Ser Ala Ser Thr Asp Phe Tyr His Thr Gln Asp Phe
20 25 30
Leu Glu Trp Arg Arg Arg Leu Lys Ser Leu Ala Leu Arg Leu Ala
35 40 45
Gln Tyr Pro Gly Arg Gly Ser Ala Glu Gly Cys Asp Phe Ser Ile
50 55 60
His Phe Ser Ser Phe Gly Asp Val Ala Cys Met Ala Ile Cys Ser
65 70 75
Cys Gln Cys Pro Ala Ala Met Ala Phe Cys Phe Leu Glu Thr Leu
80 85 90
Trp Trp Glu Phe Thr Ala Ser Tyr Asp Thr Thr Cys Ile Gly Leu
95 100 105
Ala Ser Arg Pro Tyr Ala Phe Leu Glu Phe Asp Ser Ile Ile Gln
110 115 120
Lys Val Lys Trp His Phe Asn Tyr Val Ser Ser Ser Gln Met Glu
125 130 135
Cys Ser Leu Glu Lys Ile Gln Glu Glu Leu Lys Leu Gln Pro Pro
140 145 150
Ala Val Leu Thr Leu Glu Asp Thr Asp Val Ala Asn Gly Val Met
155 160 165
Asn Gly His Thr Pro Met His Leu Glu Pro Ala Pro Asn Phe Arg
170 175 180
Met Glu Pro Val Thr Ala Leu Gly Ile Leu Ser Leu Ile Leu Asn
185 190 195
Ile Met Cys Ala Ala Leu Asn Leu Ile Arg Gly Val His Leu Ala
200 205 210

Glu His Ser Leu Gln Asp Pro Arg Ser Trp Phe Cys Trp Leu Asp
215 220 225

Gln Thr Ser

<210> 136

<211> 239

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 39, 61, 143, 209

<223> unknown base

<400> 136

tgcttcctgg agaccctgtg gtgggaattc acagcttcnt atgacactac 50

ctgcattggc ntagcctcca ggccatacgc ttttcttgag ttgacagca 100

tcattcagaa agtgaagtgg cattttaact atgtaagttc ctntcagatg 150

gagtgcagct tggaaaaaat tcaggaggag ctcaagttgc agcctccagc 200

ggttctcant atggaggaca cagatgtggc aaatggggt 239

<210> 137

<211> 2300

<212> DNA

<213> Homo sapiens

<400> 137

ctcagcggcg cttcctcgta ggcagcctag tggcgggtgt ttgcattgaa 50

acgtgagcgc gacccgacct taaagagtgg ggagcaaagg gaggacagag 100

ccctttaaaa cgaggcgggt ggtgcctgcc cctttaaggc cggggcgtcc 150

ggacgactgt atctgagccc cagactgcc cagatctctg tcgcaggctg 200

cgaggaaagg cccctaggct gggctctgggt gcttggcggc ggcggcttcc 250

tccccgctcg tcctccccgg gccagaggc acctcggtt cagtcagtct 300

gagcagagta tggaagcacc tgactacgaa gtgctatccg tgcgagaaca 350

gctattccac gagaggatcc gcgagtgtat tatatcaaca cttctgtttg 400

caacactgta catcctctgc cacatcttcc tgacctgctt caagaagcct 450

gctgagttca ccacagtgga tgatgaagat gccaccgtca acaagattgc 500

gctcgagctg tgcaacctta ccctggcaat tgccctgggt gctgtcctgc 550

tcctgccctt ctccatcatc agcaatgagg tgctgctctc cctgcctcgg 600

aactactaca tccagtggct caacggctcc ctcatccatg gcctctggaa 650
ccttgttttt ctcttcccca acctgtccct catcttcctc atgccctttg 700
catatttctt cactgagtct gagggctttg ctggctccag aaagggtgtc 750
ctgggccggg tctatgagac agtgggtgatg ttgatgctcc tcactctgct 800
ggtgctaggt atgggtgtggg tggcatcagc cattgtggac aagaacaagg 850
ccaacagaga gtcactctat gacttttggg agtactatct cccctacctc 900
tactcatgca tctccttctt tggggttctg ctgctcctgg tgtgtactcc 950
actgggtctc gcccgcatgt tctccgtcac tgggaagctg ctagtcaagc 1000
cccggctgct ggaagacctg gaggagcagc tgtactgctc agcctttgag 1050
gaggcagccc tgaccgcag gatctgtaat cctacttctt gctggctgcc 1100
tttagacatg gagctgctac acagacaggt cctggctctg cagacacaga 1150
gggtcctgct ggagaagagg cggaaggctt cagcctggca acggaacctg 1200
ggctaccccc tggctatgct gtgcttctg gtgctgacgg gcctgtctgt 1250
gctcattgtg gccatccaca tcttgagct gctcatcgat gaggctgcca 1300
tgccccgagg catgcagggt acctccttag gccaggctc cttctccaag 1350
ctgggctcct ttggtgccgt cattcagggt gtactcatct ttacctaata 1400
gggtgcctca gttgtgggt tctatagctc tccactcttc cggagcctgc 1450
ggcccagatg gcacgacact gccatgacgc agataattgg gaactgtgtc 1500
tgtctcctgg tctaagctc agcacttct gtcttctctc gaaccctggg 1550
gctcactcgc tttgacctgc tgggtgactt tggacgcttc aactggctgg 1600
gcaatttcta catttgtgtc ctctacaacg cagcctttgc aggcctcacc 1650
acactctgtc tggngaagac cttcactgca gctgtgcggg cagagctgat 1700
ccgggccttt gggctggaca gactgccgct gcccgctctc ggtttcccc 1750
aggcatctag gaagacctag caccagtgc ctccagctgg ggggtgggaag 1800
gaaaaaactg gacactgcca tctgctgcct aggcctggag ggaagcccaa 1850
ggctacttgg acctcaggac ctggaatctg agagggtggg tggcagaggg 1900
gagcagagcc atctgcacta ttgcataatc tgagccagag tttgggacca 1950
ggacctcctg cttttccata ctttaactgtg gcctcagcat ggggtagggc 2000

tgggtgactg ggtctagccc ctgateccaa atctgtttac acatcaatct 2050
 gcctcactgc tgttctgggc catccccata gccatgttta catgatttga 2100
 tgtgcaatag ggtggggtag gggcagggaa aggactgggc cagggcaggc 2150
 tcgggagata gattgtctcc cttgcctctg gccagcaga gcctaagcac 2200
 tgtgctatcc tggaggggct ttggaccacc tgaaagacca aggggatagg 2250
 gaggaggagg cttcagccat cagcaataaa gttgatccca gggaaaaaaa 2300

<210> 138

<211> 489

<212> PRT

<213> Homo sapiens

<400> 138

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Ala | Pro | Asp | Tyr | Glu | Val | Leu | Ser | Val | Arg | Glu | Gln | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Phe | His | Glu | Arg | Ile | Arg | Glu | Cys | Ile | Ile | Ser | Thr | Leu | Leu | Phe |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ala | Thr | Leu | Tyr | Ile | Leu | Cys | His | Ile | Phe | Leu | Thr | Arg | Phe | Lys |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Lys | Pro | Ala | Glu | Phe | Thr | Thr | Val | Asp | Asp | Glu | Asp | Ala | Thr | Val |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Asn | Lys | Ile | Ala | Leu | Glu | Leu | Cys | Thr | Phe | Thr | Leu | Ala | Ile | Ala |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Leu | Gly | Ala | Val | Leu | Leu | Leu | Pro | Phe | Ser | Ile | Ile | Ser | Asn | Glu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Val | Leu | Leu | Ser | Leu | Pro | Arg | Asn | Tyr | Tyr | Ile | Gln | Trp | Leu | Asn |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Gly | Ser | Leu | Ile | His | Gly | Leu | Trp | Asn | Leu | Val | Phe | Leu | Phe | Pro |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Asn | Leu | Ser | Leu | Ile | Phe | Leu | Met | Pro | Phe | Ala | Tyr | Phe | Phe | Thr |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Glu | Ser | Glu | Gly | Phe | Ala | Gly | Ser | Arg | Lys | Gly | Val | Leu | Gly | Arg |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Val | Tyr | Glu | Thr | Val | Val | Met | Leu | Met | Leu | Leu | Thr | Leu | Leu | Val |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Leu | Gly | Met | Val | Trp | Val | Ala | Ser | Ala | Ile | Val | Asp | Lys | Asn | Lys |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Ala | Asn | Arg | Glu | Ser | Leu | Tyr | Asp | Phe | Trp | Glu | Tyr | Tyr | Leu | Pro |
| | | | | 185 | | | | | 190 | | | | | 195 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Leu | Tyr | Ser | Cys | Ile | Ser | Phe | Leu | Gly | Val | Leu | Leu | Leu | Leu | 200 | 205 | 210 |
| Val | Cys | Thr | Pro | Leu | Gly | Leu | Ala | Arg | Met | Phe | Ser | Val | Thr | Gly | 215 | 220 | 225 |
| Lys | Leu | Leu | Val | Lys | Pro | Arg | Leu | Leu | Glu | Asp | Leu | Glu | Glu | Gln | 230 | 235 | 240 |
| Leu | Tyr | Cys | Ser | Ala | Phe | Glu | Glu | Ala | Ala | Leu | Thr | Arg | Arg | Ile | 245 | 250 | 255 |
| Cys | Asn | Pro | Thr | Ser | Cys | Trp | Leu | Pro | Leu | Asp | Met | Glu | Leu | Leu | 260 | 265 | 270 |
| His | Arg | Gln | Val | Leu | Ala | Leu | Gln | Thr | Gln | Arg | Val | Leu | Leu | Glu | 275 | 280 | 285 |
| Lys | Arg | Arg | Lys | Ala | Ser | Ala | Trp | Gln | Arg | Asn | Leu | Gly | Tyr | Pro | 290 | 295 | 300 |
| Leu | Ala | Met | Leu | Cys | Leu | Leu | Val | Leu | Thr | Gly | Leu | Ser | Val | Leu | 305 | 310 | 315 |
| Ile | Val | Ala | Ile | His | Ile | Leu | Glu | Leu | Leu | Ile | Asp | Glu | Ala | Ala | 320 | 325 | 330 |
| Met | Pro | Arg | Gly | Met | Gln | Gly | Thr | Ser | Leu | Gly | Gln | Val | Ser | Phe | 335 | 340 | 345 |
| Ser | Lys | Leu | Gly | Ser | Phe | Gly | Ala | Val | Ile | Gln | Val | Val | Leu | Ile | 350 | 355 | 360 |
| Phe | Tyr | Leu | Met | Val | Ser | Ser | Val | Val | Gly | Phe | Tyr | Ser | Ser | Pro | 365 | 370 | 375 |
| Leu | Phe | Arg | Ser | Leu | Arg | Pro | Arg | Trp | His | Asp | Thr | Ala | Met | Thr | 380 | 385 | 390 |
| Gln | Ile | Ile | Gly | Asn | Cys | Val | Cys | Leu | Leu | Val | Leu | Ser | Ser | Ala | 395 | 400 | 405 |
| Leu | Pro | Val | Phe | Ser | Arg | Thr | Leu | Gly | Leu | Thr | Arg | Phe | Asp | Leu | 410 | 415 | 420 |
| Leu | Gly | Asp | Phe | Gly | Arg | Phe | Asn | Trp | Leu | Gly | Asn | Phe | Tyr | Ile | 425 | 430 | 435 |
| Val | Phe | Leu | Tyr | Asn | Ala | Ala | Phe | Ala | Gly | Leu | Thr | Thr | Leu | Cys | 440 | 445 | 450 |
| Leu | Val | Lys | Thr | Phe | Thr | Ala | Ala | Val | Arg | Ala | Glu | Leu | Ile | Arg | 455 | 460 | 465 |
| Ala | Phe | Gly | Leu | Asp | Arg | Leu | Pro | Leu | Pro | Val | Ser | Gly | Phe | Pro | 470 | 475 | 480 |

Gln Ala Ser Arg Lys Thr Gln His Gln
485

<210> 139
<211> 294
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 53, 57
<223> unknown base

<400> 139
ggctgccgag ggaaggcccc ttgggttggt cttggttgct tggcggcggc 50
ggnnttcntcc ccgctcgccc tccccgggcc cagaggcacc tcggcttcag 100
tcattgctgag cagagtatgg aagcacctga ctacgaagtg ctatccgtgc 150
gagaacagct attccacgag aggatccgcg agtgtattat atcaacactt 200
ctgtttgcaa cactgtacat cctctgccac atcttcctga cccgcttcaa 250
gaagcctgct gagttcacca cagtggatga tgaagatgcc accg 294

<210> 140
<211> 526
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 197, 349
<223> unknown base

<400> 140
gaccgacctt aaagagtggg agcaaaggga ggacagagcc ttttaaaacg 50
aggcgggtggt gcctgccctt taagggcggg gcgtccggac gactgtatct 100
gagccccaga ctgccccgag tttctgtcgc aggctgcgag gaaaggcccc 150
taggctgggt ctggtgcttg gcggcggcgg cttcctcccc gttgtcntcc 200
ccgggccccag aggcacctcg gcttcagtca tgctgagcag agtatggaag 250
cacctgacta cgaagtgcta tccgtgcgag aacagctatt ccacgagagg 300
atccgcgagt gtattatata aacacttctg tttgcaacac tgtacatcnt 350
ctgccacatc ttctgacctt gcttcaagaa gcctgctgag ttcaccacag 400
tggatgatga agatgccacc gtcaacaaga ttgcgctcga gctgtgcacc 450
tttacccctg caattgccct ggggtgctgtc ctgctcctgc ctttctccat 500

catcagcaat gaggtgctgc actccc 526

<210> 141

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 141

gactgtatct gagccccaga ctgc 24

<210> 142

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 142

tcagcaatga ggtgctgctc 20

<210> 143

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 143

tgaggaagat gagggacagg ttgg 24

<210> 144

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 144

tatggaagca cctgactacg aagtgctatc cgtgcgagaa cagctattcc 50

<210> 145

<211> 685

<212> DNA

<213> Homo sapiens

<400> 145

gatgtgctcc ttggagctgg tgtgcagtgt cctgactgta agatcaagtc 50

caaacctgtt ttggaattga ggaaacttct cttttgatct cagcccttgg 100

tggtccaggt cttcatgctg ctgtgggtga tattactggg cctggctcct 150

gtcagtggac agtttgcaag gagacccagg cccattatTT tCctccagcc 200
 tccatggacc acagtcttcc aaggagagag agtgaccctc acttgcaagg 250
 gatttcgctt ctactcacca cagaaaacaa aatggtagca tcggtacctt 300
 gggaaagaaa tactaagaga aaccccagac aatatccttg aggttcagga 350
 atctggagag tacagatgcc agggccaggg ctccctctc agtagccctg 400
 tgcacttgga tttttcttca gagatgggat ttctcatgc tgcccaggct 450
 aatgttgaac tcctgggctc aagtgatctg ctcacctagg cctctcaaag 500
 cgctgggatt acagcttcgc tgatcctgca agctccactt tctgtgtttg 550
 aaggagactc tgtggttctg aggtgccggg caaaggcgga agtaactg 600
 aataatacta tttacaagaa tgataatgtc ctggcattcc ttaataaaaag 650
 aactgacttc caaaaaaaaa aaaaaaaaaa aaaaa 685

<210> 146

<211> 124

<212> PRT

<213> Homo sapiens

<400> 146

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Leu | Trp | Val | Ile | Leu | Leu | Val | Leu | Ala | Pro | Val | Ser | Gly |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Gln | Phe | Ala | Arg | Thr | Pro | Arg | Pro | Ile | Ile | Phe | Leu | Gln | Pro | Pro |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Trp | Thr | Thr | Val | Phe | Gln | Gly | Glu | Arg | Val | Thr | Leu | Thr | Cys | Lys |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Gly | Phe | Arg | Phe | Tyr | Ser | Pro | Gln | Lys | Thr | Lys | Trp | Tyr | His | Arg |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Tyr | Leu | Gly | Lys | Glu | Ile | Leu | Arg | Glu | Thr | Pro | Asp | Asn | Ile | Leu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Glu | Val | Gln | Glu | Ser | Gly | Glu | Tyr | Arg | Cys | Gln | Ala | Gln | Gly | Ser |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Pro | Leu | Ser | Ser | Pro | Val | His | Leu | Asp | Phe | Ser | Ser | Glu | Met | Gly |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Phe | Pro | His | Ala | Ala | Gln | Ala | Asn | Val | Glu | Leu | Leu | Gly | Ser | Ser |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Asp | Leu | Leu | Thr | | | | | | | | | | | |

<210> 147

<211> 1621
<212> DNA
<213> Homo sapiens

<400> 147
cagaagaggg ggctagctag ctgtctctgc ggaccaggga gacccccgcg 50
cccccccggt gtgaggcggc ctcacagggc cgggtgggct ggcgagccga 100
cgcgggcggcg gaggaggctg tgaggagtgt gtggaacagg acccgggaca 150
gaggaaccat ggctccgcag aacctgagca ccttttgcct gttgctgcta 200
tacctcatcg gggcgggtgat tgccggacga gatttctata agatcttggg 250
ggtgcctcga agtgccctcta taaaggatat taaaaaggcc tataggaaac 300
tagccctgca gcttcatccc gaccggaacc ctgatgatcc acaagcccag 350
gagaaattcc aggatctggg tgctgcttat gaggttctgt cagatagtga 400
gaaacggaaa cagtacgata cttatgggtga agaaggatta aaagatggtc 450
atcagagctc ccatggagac attttttcac acttcttttg ggattttggt 500
ttcatgtttg gaggaacccc tcgtcagcaa gacagaaata ttccaagagg 550
aagtgatatt attgtagatc tagaagtcac tttggaagaa gtatatgcag 600
gaaattttgt ggaagtagtt agaaacaaac ctgtggcaag gcaggctcct 650
ggcaaacgga agtgcaattg tcggcaagag atgcggacca ccagctggg 700
ccctggggcg ttccaaatga ccaggagggt ggtctgcgac gaatgcccta 750
atgtcaaact agtgaatgaa gaacgaacgc tggaagtaga aatagagcct 800
ggggtgagag acggcatgga gtaccctttt attggagaag gtgagcctca 850
cgtggatggg gagcctggag atttacgggt ccgaatcaaa gttgtcaagc 900
acccaatatt tgaaaggaga ggagatgatt tgtacacaaa tgtgacaatc 950
tcattagttg agtcactggt tggctttgag atggatatta ctcaattgga 1000
tggtcacaag gtacatattt cccgggataa gatcaccagg ccaggagcga 1050
agctatggaa gaaaggggaa gggctcccca actttgacaa caacaatatc 1100
aagggtcttt tgataatcac ttttgatgtg gattttccaa aagaacagtt 1150
aacagaggaa gcgagagaag gtatcaaaca gctactgaaa caagggtcag 1200
tgcagaaggt atacaatgga ctgcaaggat attgagagtg aataaaattg 1250
gactttgttt aaaataagtg aataagcgat atttattatc tgcaaggttt 1300

ttttgtgtgt gtttttgttt ttattttcaa tatgcaagtt aggcttaatt 1350
 tttttatcta atgatcatca tgaaatgaat aagagggctt aagaatttgt 1400
 ccatttgcac tcggaaaaga atgaccagca aaaggtttac taatacctct 1450
 ccctttgggg atttaatgtc tgggtgctgcc gcctgagttt caagaattaa 1500
 agctgcaaga ggactccagg agcaaaagaa acacaatata gaggggttga 1550
 gttgttagca atttcattca aaatgccaac tggagaagtc tgtttttaaa 1600
 tacattttgt tgttattttt a 1621

<210> 148
 <211> 358
 <212> PRT
 <213> Homo sapiens

<400> 148
 Met Ala Pro Gln Asn Leu Ser Thr Phe Cys Leu Leu Leu Leu Tyr
 1 5 10 15
 Leu Ile Gly Ala Val Ile Ala Gly Arg Asp Phe Tyr Lys Ile Leu
 20 25 30
 Gly Val Pro Arg Ser Ala Ser Ile Lys Asp Ile Lys Lys Ala Tyr
 35 40 45
 Arg Lys Leu Ala Leu Gln Leu His Pro Asp Arg Asn Pro Asp Asp
 50 55 60
 Pro Gln Ala Gln Glu Lys Phe Gln Asp Leu Gly Ala Ala Tyr Glu
 65 70 75
 Val Leu Ser Asp Ser Glu Lys Arg Lys Gln Tyr Asp Thr Tyr Gly
 80 85 90
 Glu Glu Gly Leu Lys Asp Gly His Gln Ser Ser His Gly Asp Ile
 95 100 105
 Phe Ser His Phe Phe Gly Asp Phe Gly Phe Met Phe Gly Gly Thr
 110 115 120
 Pro Arg Gln Gln Asp Arg Asn Ile Pro Arg Gly Ser Asp Ile Ile
 125 130 135
 Val Asp Leu Glu Val Thr Leu Glu Glu Val Tyr Ala Gly Asn Phe
 140 145 150
 Val Glu Val Val Arg Asn Lys Pro Val Ala Arg Gln Ala Pro Gly
 155 160 165
 Lys Arg Lys Cys Asn Cys Arg Gln Glu Met Arg Thr Thr Gln Leu
 170 175 180
 Gly Pro Gly Arg Phe Gln Met Thr Gln Glu Val Val Cys Asp Glu

| 185 | | | | | 190 | | | | | 195 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Pro | Asn | Val | Lys | Leu | Val | Asn | Glu | Glu | Arg | Thr | Leu | Glu | Val |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Glu | Ile | Glu | Pro | Gly | Val | Arg | Asp | Gly | Met | Glu | Tyr | Pro | Phe | Ile |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Gly | Glu | Gly | Glu | Pro | His | Val | Asp | Gly | Glu | Pro | Gly | Asp | Leu | Arg |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Phe | Arg | Ile | Lys | Val | Val | Lys | His | Pro | Ile | Phe | Glu | Arg | Arg | Gly |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Asp | Asp | Leu | Tyr | Thr | Asn | Val | Thr | Ile | Ser | Leu | Val | Glu | Ser | Leu |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Val | Gly | Phe | Glu | Met | Asp | Ile | Thr | His | Leu | Asp | Gly | His | Lys | Val |
| | | | | 275 | | | | | 280 | | | | | 285 |
| His | Ile | Ser | Arg | Asp | Lys | Ile | Thr | Arg | Pro | Gly | Ala | Lys | Leu | Trp |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Lys | Lys | Gly | Glu | Gly | Leu | Pro | Asn | Phe | Asp | Asn | Asn | Asn | Ile | Lys |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Gly | Ser | Leu | Ile | Ile | Thr | Phe | Asp | Val | Asp | Phe | Pro | Lys | Glu | Gln |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Leu | Thr | Glu | Glu | Ala | Arg | Glu | Gly | Ile | Lys | Gln | Leu | Leu | Lys | Gln |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Gly | Ser | Val | Gln | Lys | Val | Tyr | Asn | Gly | Leu | Gln | Gly | Tyr | | |
| | | | | 350 | | | | | 355 | | | | | |

<210> 149
 <211> 509
 <212> DNA
 <213> Homo sapiens

 <220>
 <221> unsure
 <222> 34, 52, 134, 142, 155, 158, 196, 217, 228, 272, 347, 410, 445, 482
 <223> unknown base

 <400> 149
 tgggaccagg gaaccccggtg ccccccgggtg gagngcctaa caggccggtg 50

 gntgcgaccg aagcggcggtg cggaggaggt tttgaggatt tttggaacag 100

 gaccgagaca gaggaaccat ggttccgcag aacntgagca cnttttgcct 150

 gttgntgnta tacttcatcg gggcggtgat tgccggacga gatttntata 200

 agattttggg gtgcctngaa gtgccttnta taaaggatat taaaaaggcc 250

tataggaaac tagccctgca gntttatccc gaccggaacc ctgatgatcc 300
acaagcccag gagaaattcc aggatttggg tgctgcttat gaggttntgt 350
cagatagtga gaaacggaaa cagtacgata attatggtga agaaggatta 400
aaagatggtg atcagagctc ccatggagac attttttcac acttntttgg 450
ggattttggt ttcattgttg gaggaacccc tngtcagcaa gacagaaata 500
ttccaagag 509

<210> 150
<211> 1532
<212> DNA
<213> Homo sapiens

<400> 150
ggcacgaggc ggcggggcag tcgcgggatg cggccgggag ccacagcctg 50
aggccctcag gtctctgcag gtgtcgtgga ggaacctagc acctgccatc 100
ctcttcccca atttgccact tccagcagct ttagcccatg aggaggatgt 150
gaccgggact gagtcaggag ccctctggaa gcatggagac tgtggtgatt 200
gttgccatag gtgtgctggc caccatcttt ctggcttcgt ttgcagcctt 250
ggtgctggtt tgcaggcagc gctactgccg gccgcgagac ctgctgcagc 300
gctatgattc taagcccatt gtggacctca ttggtgccat ggagaccag 350
tctgagccct ctgagttaga actggacgat gtcgttatca ccaaccccca 400
cattgaggcc attctggaga atgaagactg gatcgaagat gcctcgggtc 450
tcatgtccca ctgcattgcc atcttgaaga tttgtcacac tctgacagag 500
aagcttggtg ccatgacaat gggctctggg gcccaagatga agacttcagc 550
cagtgtcagc gacatcattg tgggtggccaa gcggatcagc cccagggtgg 600
atgatgttgt gaagtcgatg taccctccgt tggaccccaa actcctggac 650
gcacggacga ctgccctgct cctgtctgtc agtcacctgg tgctggtgac 700
aaggaatgcc tgccatctga cgggaggcct ggactggatt gaccagtctc 750
tgtcggctgc tgaggagcat ttggaagtcc ttcgagaagc agccctagct 800
tctgagccag ataaaggcct cccaggccct gaaggcttcc tgcaggagca 850
gtctgcaatt tagtgccctac aggccagcag ctagccatga aggccctgac 900
cgccatccct ggatggctca gcttagcctt ctactttttc ctatagagtt 950
agttgttctc cagggtgga gagttcagct gtgtgtgcat agtaaagcag 1000

gagatccccg tcagtttatg cctcttttgc agttgcaaac tgtggctggt 1050
 gagtggcagt ctaatactac agttagggga gatgccattc actctctgca 1100
 agaggagtat tgaaaactgg tggactgtca gctttattta gctcacctag 1150
 tgttttcaag aaaattgagc caccgtctaa gaaatcaaga ggtttcacat 1200
 taaaattaga atttctggcc tctctcgatc ggtcagaatg tgtggcaatt 1250
 ctgatctgca ttttcagaag aggacaatca attgaaacta agtagggggt 1300
 tcttcttttg gcaagacttg tactctctca cctggcctgt ttcatttatt 1350
 tgtattatct gcctgggtccc tgaggcgtct gggctctctcc tctcccttgc 1400
 aggtttgggt ttgaagctga ggaactacaa agttgatgat ttctttttta 1450
 tctttatgcc tgcaatttta cctagctacc actaggtgga tagtaaattt 1500
 atacttatgt ttccctcaaa aaaaaaaaaa aa 1532

<210> 151
 <211> 226
 <212> PRT
 <213> Homo sapiens

<400> 151
 Met Glu Thr Val Val Ile Val Ala Ile Gly Val Leu Ala Thr Ile
 1 5 10 15
 Phe Leu Ala Ser Phe Ala Ala Leu Val Leu Val Cys Arg Gln Arg
 20 25 30
 Tyr Cys Arg Pro Arg Asp Leu Leu Gln Arg Tyr Asp Ser Lys Pro
 35 40 45
 Ile Val Asp Leu Ile Gly Ala Met Glu Thr Gln Ser Glu Pro Ser
 50 55 60
 Glu Leu Glu Leu Asp Asp Val Val Ile Thr Asn Pro His Ile Glu
 65 70 75
 Ala Ile Leu Glu Asn Glu Asp Trp Ile Glu Asp Ala Ser Gly Leu
 80 85 90
 Met Ser His Cys Ile Ala Ile Leu Lys Ile Cys His Thr Leu Thr
 95 100 105
 Glu Lys Leu Val Ala Met Thr Met Gly Ser Gly Ala Lys Met Lys
 110 115 120
 Thr Ser Ala Ser Val Ser Asp Ile Ile Val Val Ala Lys Arg Ile
 125 130 135
 Ser Pro Arg Val Asp Asp Val Val Lys Ser Met Tyr Pro Pro Leu

| | | | | | |
|---|-----|--|-----|--|-----|
| | 140 | | 145 | | 150 |
| Asp Pro Lys Leu Leu Asp Ala Arg Thr Thr Ala Leu Leu Leu Ser | | | | | |
| | 155 | | 160 | | 165 |
| Val Ser His Leu Val Leu Val Thr Arg Asn Ala Cys His Leu Thr | | | | | |
| | 170 | | 175 | | 180 |
| Gly Gly Leu Asp Trp Ile Asp Gln Ser Leu Ser Ala Ala Glu Glu | | | | | |
| | 185 | | 190 | | 195 |
| His Leu Glu Val Leu Arg Glu Ala Ala Leu Ala Ser Glu Pro Asp | | | | | |
| | 200 | | 205 | | 210 |
| Lys Gly Leu Pro Gly Pro Glu Gly Phe Leu Gln Glu Gln Ser Ala | | | | | |
| | 215 | | 220 | | 225 |

Ile

<210> 152
 <211> 1027
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 1017, 1020
 <223> unknown base

<400> 152
 gcttcatttc tcccgactca gcttcccacc ctgggctttc cgaggtgctt 50
 tcgccgctgt cccaccact gcagccatga tctccttaac ggacacgcag 100
 aaaattggaa tgggattaac aggatttgga gtgtttttcc tgttcttttg 150
 aatgattctc ttttttgaca aagcactact ggctattgga aatgttttat 200
 ttgtagccgg cttggctttt gtaattgggt tagaaagaac attcagattc 250
 ttcttccaaa aacataaaat gaaagctaca ggtttttttc tgggtggtgt 300
 atttgtagtc cttattgggt ggcctttgat aggcatgac ttcgaaattt 350
 atggattttt tctcttggtc aggggcttct ttctgtcgt tgttggttt 400
 attagaagag tgccagtcct tggatccctc ctaaatttac ctggaattag 450
 atcatttgta gataaagttg gagaaagcaa caatatggta taacaacaag 500
 tgaatttgaa gactcattta aaatattgtg ttatttataa agtcatttga 550
 agaatattca gcacaaaatt aaattacatg aaatagcttg taatgttctt 600
 tacaggagtt taaaacgtat agcctacaaa gtaccagcag caaattagca 650

aagaagcagt gaaaacaggc ttctactcaa gtgaactaag aagaagtcag 700
caagcaaact gagagaggtg aaatccatgt taatgatgct taagaaactc 750
ttgaaggcta tttgtgttgt ttttccacaa tgtgcgaaac tcagccatcc 800
ttagagaact gtggtgcctg tttcttttct ttttattttg aaggctcagg 850
agcatccata ggcatttgct ttttagaagt gtccactgca atggcaaaaa 900
tattttccagt tgcactgtat ctctggaagt gatgcatgaa ttcgattgga 950
ttgtgtcatt ttaaagtatt aaaaccaagg aaacccaat tttgatgtat 1000
ggattacttt tttttgngcn cagggcc 1027

<210> 153
<211> 138
<212> PRT
<213> Homo sapiens

<220>
<221> N-myristoylation Sites
<222> 11-16, 51-56 and 116-121
<223> N-myristoylation Sites.

<220>
<221> Transmembrane domains
<222> 12-30, 33-52, 69-89 and 93-109
<223> Transmembrane domains

<220>
<221> Aminoacyl-transfer RNA Synthetases.
<222> 49-59
<223> Aminoacyl-transfer RNA synthetases class-II protein.

<400> 153
Met Ile Ser Leu Thr Asp Thr Gln Lys Ile Gly Met Gly Leu Thr
1 5 10 15
Gly Phe Gly Val Phe Phe Leu Phe Phe Gly Met Ile Leu Phe Phe
20 25 30
Asp Lys Ala Leu Leu Ala Ile Gly Asn Val Leu Phe Val Ala Gly
35 40 45
Leu Ala Phe Val Ile Gly Leu Glu Arg Thr Phe Arg Phe Phe Phe
50 55 60
Gln Lys His Lys Met Lys Ala Thr Gly Phe Phe Leu Gly Gly Val
65 70 75
Phe Val Val Leu Ile Gly Trp Pro Leu Ile Gly Met Ile Phe Glu
80 85 90
Ile Tyr Gly Phe Phe Leu Leu Phe Arg Gly Phe Phe Pro Val Val
95 100 105

Val Gly Phe Ile Arg Arg Val Pro Val Leu Gly Ser Leu Leu Asn
110 115 120

Leu Pro Gly Ile Arg Ser Phe Val Asp Lys Val Gly Glu Ser Asn
125 130 135

Asn Met Val

<210> 154
<211> 405
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 66
<223> unknown base

<400> 154
gaagacgtgg cggctctcgc ctgggctggt tcccggcttc atttctcccg 50
actcagcttc ccacntggg ctttccgagg tgctttcgcc gctgtcccca 100
ccactgcagc catgatctcc ttaacggaca cgcagaaaat tggaatggga 150
ttaaccggat ttggagtgtt tttcctgttc tttggaatga ttctcttttt 200
tgacaaagca ctactggcta ttggaaatgt tttatttgta gccggcttgg 250
cttttgtaat tggtttagaa agaacattca gattcttctt ccaaaaacat 300
aaaatgaaag ctacaggttt ttttctgggt ggtgtatttg tagtccttat 350
tggttggcct ttgataggca tgatcttcga aatttatgga ttttttctct 400
tgttc 405

<210> 155
<211> 1781
<212> DNA
<213> Homo sapiens

<400> 155
ggcacgaggc tgaaccagc cggctccatc tcagcttctg gtttctaagt 50
ccatgtgcc aaggctgcc ggaaggagac gccttctga gtcttgatc 100
tttcttctt ctggaaatct ttgactgtgg gtagttattt atttctgaat 150
aagagcgtcc acgcatcatg gacctcgcg gactgctgaa gtctcagttc 200
ctgtgccacc tggcttctg ctacgtcttt attgcctcag ggctaatacat 250
caacaccatt cagctcttca ctctctctct ctggccatt aacaagcagc 300

tcttccggaa gatcaactgc agactgtcct attgcatctc aagccagctg 350
gtgatgctgc tggagtgggtg gtcgggcacg gaatgcacca tcttcacgga 400
cccgcgcgcc tacctcaagt atgggaagga aaatgccatc gtggttctca 450
accacaagtt tgaaattgac tttctgtgtg gctggagcct gtccgaacgc 500
tttgggctgt tagggggctc caaggctctg gccaagaaag agctggccta 550
tgtcccaatt atcggctgga tgtggtactt caccgagatg gtcttctgtt 600
cgcgcaagtg ggagcaggat cgcaagacgg ttgccaccag tttgcagcac 650
ctccgggact accccgagaa gtattttttc ctgattcact gtgagggcac 700
acggttcacg gagaagaagc atgagatcag catgcagggtg gcccgggcca 750
aggggctgcc tcgcctcaag catcacctgt tgccacgaac caagggcttc 800
gccatcaccg tgaggagctt gagaaatgta gtttcagctg tatatgactg 850
tacactcaat ttcagaaata atgaaaatcc aacactgctg ggagtcctaa 900
acggaaagaa ataccatgca gatttgtatg ttaggaggat cccactggaa 950
gacatccctg aagacgatga cgagtgtctg gcctggctgc acaagctcta 1000
ccaggagaag gatgcctttc aggaggagta ctacaggacg ggcaccttc 1050
cagagacgcc catggtgccc cccggcggc cctggaccct cgtgaactgg 1100
ctgttttggg cctcgctggt gctctaccct ttcttccagt tcctggtcag 1150
catgatcagg agcgggtctt ccctgacgct ggccagcttc atcctcgtct 1200
tctttgtggc ctccgtggga gttc gatgga tgattggtgt gacggaaatt 1250
gacaagggct ctgcctacgg caactctgac agcaagcaga aactgaatga 1300
ctgactcagg gaggtgtcac catccgaagg gaaccttggg gaactggtgg 1350
cctctgcata tcctccttag tgggacacgg tgacaaaggc tgggtgagcc 1400
cctgctgggc acggcggaag tcacgacctc tccagccagg gagtctggtc 1450
tcaaggccgg atggggagga agatgttttg taatcttttt ttccccatgt 1500
gcttttagtg gctttggttt tctttttgtg cgagtgtgtg tgagaatggc 1550
tgtgtggtga gtgtgaactt tgttctgtga tcatagaaag ggtatttttag 1600
gctgcagggg agggcagggc tggggaccga aggggacaag ttcccccttc 1650
atcctttggt gctgagtttt ctgtaaccct tggttgccag agataaagt 1700
aaaagtgctt taggtgagat gactaaatta tgcctccaag aaaaaaaaaat 1750

taaagtgcctt ttctgggtca aaaaaaaaaa a 1781

<210> 156

<211> 378

<212> PRT

<213> Homo sapiens

<400> 156

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Asp | Leu | Ala | Gly | Leu | Leu | Lys | Ser | Gln | Phe | Leu | Cys | His | Leu | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Val | Phe | Cys | Tyr | Val | Phe | Ile | Ala | Ser | Gly | Leu | Ile | Ile | Asn | Thr | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Ile | Gln | Leu | Phe | Thr | Leu | Leu | Leu | Trp | Pro | Ile | Asn | Lys | Gln | Leu | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Phe | Arg | Lys | Ile | Asn | Cys | Arg | Leu | Ser | Tyr | Cys | Ile | Ser | Ser | Gln | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Leu | Val | Met | Leu | Leu | Glu | Trp | Trp | Ser | Gly | Thr | Glu | Cys | Thr | Ile | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Phe | Thr | Asp | Pro | Arg | Ala | Tyr | Leu | Lys | Tyr | Gly | Lys | Glu | Asn | Ala | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Ile | Val | Val | Leu | Asn | His | Lys | Phe | Glu | Ile | Asp | Phe | Leu | Cys | Gly | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Trp | Ser | Leu | Ser | Glu | Arg | Phe | Gly | Leu | Leu | Gly | Gly | Ser | Lys | Val | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Leu | Ala | Lys | Lys | Glu | Leu | Ala | Tyr | Val | Pro | Ile | Ile | Gly | Trp | Met | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Trp | Tyr | Phe | Thr | Glu | Met | Val | Phe | Cys | Ser | Arg | Lys | Trp | Glu | Gln | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Asp | Arg | Lys | Thr | Val | Ala | Thr | Ser | Leu | Gln | His | Leu | Arg | Asp | Tyr | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Pro | Glu | Lys | Tyr | Phe | Phe | Leu | Ile | His | Cys | Glu | Gly | Thr | Arg | Phe | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Thr | Glu | Lys | Lys | His | Glu | Ile | Ser | Met | Gln | Val | Ala | Arg | Ala | Lys | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Gly | Leu | Pro | Arg | Leu | Lys | His | His | Leu | Leu | Pro | Arg | Thr | Lys | Gly | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Phe | Ala | Ile | Thr | Val | Arg | Ser | Leu | Arg | Asn | Val | Val | Ser | Ala | Val | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Tyr | Asp | Cys | Thr | Leu | Asn | Phe | Arg | Asn | Asn | Glu | Asn | Pro | Thr | Leu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |

| | | | |
|---|-----|-----|-----|
| Leu Gly Val Leu Asn Gly Lys Lys Tyr His Ala Asp Leu Tyr Val | 245 | 250 | 255 |
| Arg Arg Ile Pro Leu Glu Asp Ile Pro Glu Asp Asp Asp Glu Cys | 260 | 265 | 270 |
| Ser Ala Trp Leu His Lys Leu Tyr Gln Glu Lys Asp Ala Phe Gln | 275 | 280 | 285 |
| Glu Glu Tyr Tyr Arg Thr Gly Thr Phe Pro Glu Thr Pro Met Val | 290 | 295 | 300 |
| Pro Pro Arg Arg Pro Trp Thr Leu Val Asn Trp Leu Phe Trp Ala | 305 | 310 | 315 |
| Ser Leu Val Leu Tyr Pro Phe Phe Gln Phe Leu Val Ser Met Ile | 320 | 325 | 330 |
| Arg Ser Gly Ser Ser Leu Thr Leu Ala Ser Phe Ile Leu Val Phe | 335 | 340 | 345 |
| Phe Val Ala Ser Val Gly Val Arg Trp Met Ile Gly Val Thr Glu | 350 | 355 | 360 |
| Ile Asp Lys Gly Ser Ala Tyr Gly Asn Ser Asp Ser Lys Gln Lys | 365 | 370 | 375 |

Leu Asn Asp

<210> 157
 <211> 1849
 <212> DNA
 <213> Homo sapiens

<400> 157
 ctgaggcggc ggtagcatgg agggggagag tacgtcggcg gtgctctcgg 50
 gctttgtgct cggcgcactc gctttccagc acctcaacac ggactcggac 100
 acggaaggtt ttcttcttgg ggaagtaaaa ggtgaagcca agaacagcat 150
 tactgattcc caaatggatg atgttgaagt tgtttataca attgacattc 200
 agaaatatat tccatgctat cagcttttta gcttttataa ttcttcaggc 250
 gaagtaaatg agcaagcact gaagaaaata ttatcaaagc tcaaaaagaa 300
 tgtggtaggt tggtacaaat tccgtcgtca ttcagatcag atcatgacgt 350
 ttagagagag gctgcttcac aaaaacttgc aggagcattt ttcaaaccac 400
 gaccttgttt ttctgctatt aacaccaagt ataataacag aaagctgctc 450
 tactcatcga ctggaacatt ccttatataa acctcaaaaa ggactttttc 500
 acaggggtacc tttagtgggt gccaatctgg gcatgtctga acaactgggt 550

tataaaactg tatcagggttc ctgtatgtcc actgggtttta gccgagcagt 600
acaaacacac agctctaaat tttttgaaga agatggatcc ttaaaggagg 650
tacataagat aaatgaaatg tatgcttcat tacaagagga attaaagagt 700
atatgcaaaa aagtggaaga cagtgaacaa gcagtagata aactagtaaa 750
ggatgtaaac agattaaaac gagaaattga gaaaaggaga ggagcacaga 800
ttcaggcagc aagagagaag aacatccaaa aagaccctca ggagaacatt 850
tttctttgtc aggcattacg gacctttttt ccaaattctg aatttcttca 900
ttcatgtgtt atgtctttta aaaatagaca tgtttctaaa agtagctgta 950
actacaacca ccatctcgat gtagtagaca atctgacctt aatggtagaa 1000
cacactgaca ttctgaagc tagtcagct agtacaccac aaatcattaa 1050
gcataaagcc ttagacttag atgacagatg gcaattcaag agatctcggc 1100
tgtagatac acaagacaaa cgatctaaag caaatactgg tagtagtaac 1150
caagataaag catccaaaat gagcagccca gaaacagatg aagaaattga 1200
aaagatgaag ggttttggtg aatattcacg gtctcctaca ttttgatcct 1250
tttaacctta caaggagatt tttttatttg gctgatgggt aaagccaaac 1300
atctctattg tttttactat gttgagctac ttgcagtaag ttcatttggt 1350
tttactatgt tcacctgttt gcagtaatac acagataact cttagtgcac 1400
ttacttcaca aagtactttt tcaaacatca gatgctttta tttccaaacc 1450
tttttttcac ctttactaa gttgttgagg ggaaggctta cacagacaca 1500
ttcttttaga ttggaaaagt gagaccaggc acagtggctc acacctgtaa 1550
tcccagcact tagggaagac aagtcaggag gattgattga agctaggagt 1600
tagagaccag cctgggcaac gtattgagac catgtctatt aaaaaataaa 1650
atggaaaagc aagaatagcc ttattttcaa aatatggaaa gaaatttata 1700
tgaaaattta tctgagtcac taaaattctc cttaagtgat acttttttag 1750
aagtacatta tggctagagt tgccagataa aatgctggat atcatgcaat 1800
aaatttgcaa aacatcatct aaaattttaa aaaaaaaaaa aaaaaaaaaa 1849

<210> 158
<211> 409
<212> PRT
<213> Homo sapiens

<400> 158

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Gly | Glu | Ser | Thr | Ser | Ala | Val | Leu | Ser | Gly | Phe | Val | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Gly | Ala | Leu | Ala | Phe | Gln | His | Leu | Asn | Thr | Asp | Ser | Asp | Thr | Glu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Gly | Phe | Leu | Leu | Gly | Glu | Val | Lys | Gly | Glu | Ala | Lys | Asn | Ser | Ile |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Thr | Asp | Ser | Gln | Met | Asp | Asp | Val | Glu | Val | Val | Tyr | Thr | Ile | Asp |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ile | Gln | Lys | Tyr | Ile | Pro | Cys | Tyr | Gln | Leu | Phe | Ser | Phe | Tyr | Asn |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ser | Ser | Gly | Glu | Val | Asn | Glu | Gln | Ala | Leu | Lys | Lys | Ile | Leu | Ser |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Asn | Val | Lys | Lys | Asn | Val | Val | Gly | Trp | Tyr | Lys | Phe | Arg | Arg | His |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ser | Asp | Gln | Ile | Met | Thr | Phe | Arg | Glu | Arg | Leu | Leu | His | Lys | Asn |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Leu | Gln | Glu | His | Phe | Ser | Asn | Gln | Asp | Leu | Val | Phe | Leu | Leu | Leu |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Thr | Pro | Ser | Ile | Ile | Thr | Glu | Ser | Cys | Ser | Thr | His | Arg | Leu | Glu |
| | | | | 140 | | | | | 145 | | | | | 150 |
| His | Ser | Leu | Tyr | Lys | Pro | Gln | Lys | Gly | Leu | Phe | His | Arg | Val | Pro |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Leu | Val | Val | Ala | Asn | Leu | Gly | Met | Ser | Glu | Gln | Leu | Gly | Tyr | Lys |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Thr | Val | Ser | Gly | Ser | Cys | Met | Ser | Thr | Gly | Phe | Ser | Arg | Ala | Val |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Gln | Thr | His | Ser | Ser | Lys | Phe | Phe | Glu | Glu | Asp | Gly | Ser | Leu | Lys |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Glu | Val | His | Lys | Ile | Asn | Glu | Met | Tyr | Ala | Ser | Leu | Gln | Glu | Glu |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Leu | Lys | Ser | Ile | Cys | Lys | Lys | Val | Glu | Asp | Ser | Glu | Gln | Ala | Val |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Asp | Lys | Leu | Val | Lys | Asp | Val | Asn | Arg | Leu | Lys | Arg | Glu | Ile | Glu |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Lys | Arg | Arg | Gly | Ala | Gln | Ile | Gln | Ala | Ala | Arg | Glu | Lys | Asn | Ile |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Gln | Lys | Asp | Pro | Gln | Glu | Asn | Ile | Phe | Leu | Cys | Gln | Ala | Leu | Arg |

| 275 | | | | | | | | | | 280 | | | | | 285 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Thr | Phe | Phe | Pro | Asn | Ser | Glu | Phe | Leu | His | Ser | Cys | Val | Met | Ser | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Leu | Lys | Asn | Arg | His | Val | Ser | Lys | Ser | Ser | Cys | Asn | Tyr | Asn | His | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| His | Leu | Asp | Val | Val | Asp | Asn | Leu | Thr | Leu | Met | Val | Glu | His | Thr | | | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | | | |
| Asp | Ile | Pro | Glu | Ala | Ser | Pro | Ala | Ser | Thr | Pro | Gln | Ile | Ile | Lys | | | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | | | |
| His | Lys | Ala | Leu | Asp | Leu | Asp | Asp | Arg | Trp | Gln | Phe | Lys | Arg | Ser | | | | | |
| | | | | 350 | | | | | 355 | | | | | 360 | | | | | |
| Arg | Leu | Leu | Asp | Thr | Gln | Asp | Lys | Arg | Ser | Lys | Ala | Asn | Thr | Gly | | | | | |
| | | | | 365 | | | | | 370 | | | | | 375 | | | | | |
| Ser | Ser | Asn | Gln | Asp | Lys | Ala | Ser | Lys | Met | Ser | Ser | Pro | Glu | Thr | | | | | |
| | | | | 380 | | | | | 385 | | | | | 390 | | | | | |
| Asp | Glu | Glu | Ile | Glu | Lys | Met | Lys | Gly | Phe | Gly | Glu | Tyr | Ser | Arg | | | | | |
| | | | | 395 | | | | | 400 | | | | | 405 | | | | | |

Ser Pro Thr Phe

<210> 159
 <211> 2651
 <212> DNA
 <213> Homo sapiens

<400> 159
 ggcacagccg cgcgggcggag ggcagagtca gccgagccga gtccagccgg 50
 acgagcgggac cagcgcaggg cagcccaagc agcgcgcagc gaacgcccgc 100
 cgccgcccac accctctgcg gtccccgcgg cgcttgccac ccttcctcc 150
 ttccccgcgt ccccgctcg cgggccagtc agcttgccgg gttcgctgcc 200
 ccgcgaaacc ccgaggtcac cagcccgcgc ctctgcttcc ctgggcccgc 250
 cgccgcctcc acgcctctct tctccctgg cccggcgcct ggcaccgggg 300
 accgttgctt gacgcgaggg ccagctctac ttttcgcccc gcgtctctc 350
 cgcttgctcg cctcttccac caactccaac tccttctccc tccagctcca 400
 ctcgctagtc cccgactccg ccagccctcg gcccgctgcc gtagcgccgc 450
 ttcccgtcgg gtcccaaagg tgggaacgcg tccgccccgg ccgcacccat 500
 ggcacgggtc ggcttgcccc cgcttctctg caccctggca gtgctcagcg 550

ccgcgctgct ggctgccgag ctcaagtcga aaagttgctc ggaagtgcga 600
cgtcttttacg tgtccaaagg cttcaacaag aacgatgccc ccctccacga 650
gatcaacggt gatcatttga agatctgtcc ccagggttct acctgctgct 700
ctcaagagat ggaggagaag tacagcctgc aaagtaaaga tgatttcaa 750
agtgtggtca gcgaacagtg caatcatttg caagctgtct ttgcttcacg 800
ttacaagaag tttgatgaat tcttcaaaga actacttgaa aatgcagaga 850
aatccctgaa tgatatgttt gtgaagacat atggccattt atacatgcaa 900
aattctgagc tatttaaaga tctcttcgta gagttgaaac gttactacgt 950
ggtgggaaat gtgaacctgg aagaaatgct aaatgacttc tgggctcgcc 1000
tcctggagcg gatgttccgc ctggtgaact ccagtagca ctttacagat 1050
gagtatctgg aatgtgtgag caagtatacg gagcagctga agcccttcgg 1100
agatgtccct cgcaaattga agctccaggt tactcgtgct tttgtagcag 1150
cccgtacttt cgctcaaggc ttagcgggtg cgggagatgt cgtgagcaag 1200
gtctccgtgg taaacccac agcccagtgt acccatgccc tgttgaagat 1250
gatctactgc tcccactgcc ggggtctcgt gactgtgaag ccatgttaca 1300
actactgctc aaacatcatg agaggctggt tggccaacca aggggatctc 1350
gattttgaat ggaacaattt catagatgct atgctgatgg tggcagagag 1400
gctagagggt cctttcaaca ttgaatcggg catggatccc atcgatgtga 1450
agatttctga tgctattatg aacatgcagg ataatagtgt tcaagtgtct 1500
cagaagggtt tccagggatg tggaccccc aagcccctcc cagctggacg 1550
aatttctcgt tccatctctg aaagtgcctt cagtgtctgc ttcagaccac 1600
atcaccccca ggaacgcca accacagcag ctggcactag tttggaccga 1650
ctggttactg atgtcaagga gaaactgaaa caggccaaga aattctgggtc 1700
ctcccttccg agcaacgttt gcaacgatga gaggatggct gcaggaaacg 1750
gcaatgagga tgactgttgg aatgggaaag gcaaaagcag gtacctgttt 1800
gcagtgacag gaaatggatt agccaaccag ggcaacaacc cagaggtcca 1850
ggttgacacc agcaaaccag acatactgat ctttcgtcaa atcatggctc 1900
ttcgagtgat gaccagcaag atgaagaatg catacaatgg gaacgacgtg 1950
gacttctttg atatcagtga tgaaagtagt ggagaaggaa gtggaagtgg 2000

ctgtgagtat cagcagtgcc cttcagagtt tgactacaat gccactgacc 2050
atgctgggaa gagtgccaat gagaaagccg acagtgcctgg tgtccgtcct 2100
ggggcacagg cctacctcct cactgtcttc tgcattctgt tcctggttat 2150
gcagagagag tggagataat tctcaaactc tgagaaaaag tgttcatcaa 2200
aaagttaaaa ggcaccagtt atcacttttc taccatccta gtgactttgc 2250
tttttaaatg aatggacaac aatgtacagt ttttactatg tggccactgg 2300
tttaagaagt gctgactttg ttttctcatt cagttttggg aggaaaaggg 2350
actgtgcatt gagttggttc ctgctccccc aaaccatggt aaacgtggct 2400
aacagtgtag gtacagaact atagttagtt gtgcatttgt gattttatca 2450
ctctattatt tgtttgatg ttttttctc atttcgtttg tgggtttttt 2500
tttccaactg tgatctcgcc ttgtttctta caagcaaacc agggtcctt 2550
cttggcacgt aacatgtacg tatttctgaa atattaaata gctgtacaga 2600
agcaggtttt atttatcatg ttatcttatt aaaagaaaaa gcccaaaaag 2650
c 2651

<210> 160
<211> 556
<212> PRT
<213> Homo sapiens

<400> 160
Met Ala Arg Phe Gly Leu Pro Ala Leu Leu Cys Thr Leu Ala Val
1 5 10 15
Leu Ser Ala Ala Leu Leu Ala Ala Glu Leu Lys Ser Lys Ser Cys
20 25 30
Ser Glu Val Arg Arg Leu Tyr Val Ser Lys Gly Phe Asn Lys Asn
35 40 45
Asp Ala Pro Leu His Glu Ile Asn Gly Asp His Leu Lys Ile Cys
50 55 60
Pro Gln Gly Ser Thr Cys Cys Ser Gln Glu Met Glu Glu Lys Tyr
65 70 75
Ser Leu Gln Ser Lys Asp Asp Phe Lys Ser Val Val Ser Glu Gln
80 85 90
Cys Asn His Leu Gln Ala Val Phe Ala Ser Arg Tyr Lys Lys Phe
95 100 105
Asp Glu Phe Phe Lys Glu Leu Leu Glu Asn Ala Glu Lys Ser Leu

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | | | 110 | | | | | 115 | | | | | 120 |
| Asn | Asp | Met | Phe | Val | Lys | Thr | Tyr | Gly | His | Leu | Tyr | Met | Gln | Asn |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ser | Glu | Leu | Phe | Lys | Asp | Leu | Phe | Val | Glu | Leu | Lys | Arg | Tyr | Tyr |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Val | Val | Gly | Asn | Val | Asn | Leu | Glu | Glu | Met | Leu | Asn | Asp | Phe | Trp |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ala | Arg | Leu | Leu | Glu | Arg | Met | Phe | Arg | Leu | Val | Asn | Ser | Gln | Tyr |
| | | | | 170 | | | | | 175 | | | | | 180 |
| His | Phe | Thr | Asp | Glu | Tyr | Leu | Glu | Cys | Val | Ser | Lys | Tyr | Thr | Glu |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Gln | Leu | Lys | Pro | Phe | Gly | Asp | Val | Pro | Arg | Lys | Leu | Lys | Leu | Gln |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Val | Thr | Arg | Ala | Phe | Val | Ala | Ala | Arg | Thr | Phe | Ala | Gln | Gly | Leu |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Ala | Val | Ala | Gly | Asp | Val | Val | Ser | Lys | Val | Ser | Val | Val | Asn | Pro |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Thr | Ala | Gln | Cys | Thr | His | Ala | Leu | Leu | Lys | Met | Ile | Tyr | Cys | Ser |
| | | | | 245 | | | | | 250 | | | | | 255 |
| His | Cys | Arg | Gly | Leu | Val | Thr | Val | Lys | Pro | Cys | Tyr | Asn | Tyr | Cys |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Ser | Asn | Ile | Met | Arg | Gly | Cys | Leu | Ala | Asn | Gln | Gly | Asp | Leu | Asp |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Phe | Glu | Trp | Asn | Asn | Phe | Ile | Asp | Ala | Met | Leu | Met | Val | Ala | Glu |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Arg | Leu | Glu | Gly | Pro | Phe | Asn | Ile | Glu | Ser | Val | Met | Asp | Pro | Ile |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Asp | Val | Lys | Ile | Ser | Asp | Ala | Ile | Met | Asn | Met | Gln | Asp | Asn | Ser |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Val | Gln | Val | Ser | Gln | Lys | Val | Phe | Gln | Gly | Cys | Gly | Pro | Pro | Lys |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Pro | Leu | Pro | Ala | Gly | Arg | Ile | Ser | Arg | Ser | Ile | Ser | Glu | Ser | Ala |
| | | | | 350 | | | | | 355 | | | | | 360 |
| Phe | Ser | Ala | Arg | Phe | Arg | Pro | His | His | Pro | Glu | Glu | Arg | Pro | Thr |
| | | | | 365 | | | | | 370 | | | | | 375 |
| Thr | Ala | Ala | Gly | Thr | Ser | Leu | Asp | Arg | Leu | Val | Thr | Asp | Val | Lys |
| | | | | 380 | | | | | 385 | | | | | 390 |
| Glu | Lys | Leu | Lys | Gln | Ala | Lys | Lys | Phe | Trp | Ser | Ser | Leu | Pro | Ser |

| | 395 | 400 | 405 |
|---|-------------------------|-----|-----|
| Asn Val Cys Asn Asp Glu Arg Met Ala | Ala Gly Asn Gly Asn Glu | | |
| 410 | 415 | 420 | |
| Asp Asp Cys Trp Asn Gly Lys Gly Lys Ser Arg Tyr Leu Phe Ala | | | |
| 425 | 430 | 435 | |
| Val Thr Gly Asn Gly Leu Ala Asn Gln Gly Asn Asn Pro Glu Val | | | |
| 440 | 445 | 450 | |
| Gln Val Asp Thr Ser Lys Pro Asp Ile Leu Ile Leu Arg Gln Ile | | | |
| 455 | 460 | 465 | |
| Met Ala Leu Arg Val Met Thr Ser Lys Met Lys Asn Ala Tyr Asn | | | |
| 470 | 475 | 480 | |
| Gly Asn Asp Val Asp Phe Phe Asp Ile Ser Asp Glu Ser Ser Gly | | | |
| 485 | 490 | 495 | |
| Glu Gly Ser Gly Ser Gly Cys Glu Tyr Gln Gln Cys Pro Ser Glu | | | |
| 500 | 505 | 510 | |
| Phe Asp Tyr Asn Ala Thr Asp His Ala Gly Lys Ser Ala Asn Glu | | | |
| 515 | 520 | 525 | |
| Lys Ala Asp Ser Ala Gly Val Arg Pro Gly Ala Gln Ala Tyr Leu | | | |
| 530 | 535 | 540 | |
| Leu Thr Val Phe Cys Ile Leu Phe Leu Val Met Gln Arg Glu Trp | | | |
| 545 | 550 | 555 | |

Arg

<210> 161
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 161
 ctccgtggta aacccacag ccc 23

<210> 162
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 162
 tcacatcgat gggatccatg accg 24

<210> 163
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 163
gggtctcgtga ctgtgaagcc atgttacaac tactgctcaa acatcatgag 50

<210> 164
<211> 870
<212> DNA
<213> Homo sapiens

<400> 164
ctcgccctca aatgggaacg ctggcctggg actaaagcat agaccaccag 50
gctgagtatc ctgacctgag tcatccccag ggatcaggag cctccagcag 100
ggaaccttcc attatattct tcaagcaact tacagctgca ccgacagttg 150
cgatgaaagt tctaattctt tccctcctcc tgttgctgcc actaatgctg 200
atgtccatgg tctctagcag cctgaatcca ggggtcgcca gaggccacag 250
ggaccgaggc caggcttcta ggagatggct ccaggaaggc ggccaagaat 300
gtgagtgcaa agattggttc ctgagagccc cgagaagaaa attcatgaca 350
gtgtctgggc tgcaaagaa gcagtgcccc tgtgatcatt tcaagggcaa 400
tgtgaagaaa acaagacacc aaaggcacca cagaaagcca aacaagcatt 450
ccagagcctg ccagcaattt ctcaaacaat gtcagctaag aagctttgct 500
ctgcctttgt aggagctctg agcgcccact cttccaatta aacatttctca 550
gccaagaaga cagtgagcac acctaccaga cactcttctt ctcccacctc 600
actctcccac tgtaccaccc cctaaatcat tccagtgtc tcaaaaagca 650
tgtttttcaa gatcattttg tttgttgctc tctctagtgt cttcttctct 700
cgtcagtctt agcctgtgcc ctccccttac ccaggcttag gcttaattac 750
ctgaaagatt ccaggaaact gtagcttcct agctagtgtc atttaacctt 800
aatgcaatc aggaaagtag caaacagaag tcaataaata tttttaaatg 850
tcaaaaaaaaa aaaaaaaaaa 870

<210> 165
<211> 119
<212> PRT
<213> Homo sapiens

<400> 165

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Val | Leu | Ile | Ser | Ser | Leu | Leu | Leu | Leu | Pro | Leu | Met | |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |
| Leu | Met | Ser | Met | Val | Ser | Ser | Ser | Leu | Asn | Pro | Gly | Val | Ala | Arg |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Gly | His | Arg | Asp | Arg | Gly | Gln | Ala | Ser | Arg | Arg | Trp | Leu | Gln | Glu |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Gly | Gly | Gln | Glu | Cys | Glu | Cys | Lys | Asp | Trp | Phe | Leu | Arg | Ala | Pro |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Arg | Arg | Lys | Phe | Met | Thr | Val | Ser | Gly | Leu | Pro | Lys | Lys | Gln | Cys |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Pro | Cys | Asp | His | Phe | Lys | Gly | Asn | Val | Lys | Lys | Thr | Arg | His | Gln |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Arg | His | His | Arg | Lys | Pro | Asn | Lys | His | Ser | Arg | Ala | Cys | Gln | Gln |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Phe | Leu | Lys | Gln | Cys | Gln | Leu | Arg | Ser | Phe | Ala | Leu | Pro | Leu | |
| | | | | 110 | | | | | 115 | | | | | |

<210> 166

<211> 551

<212> DNA

<213> Homo sapiens

<400> 166

aatggctgtc ttagtacttc gcctgacagt tgtcctggga ctgcttgtct 50

tattcctgac ctgctatgca gacgacaaac cagacaagcc agacgacaag 100

ccagacgact cgggcaaaga cccaaagcca gacttcccca aattcctaag 150

cctcctgggc acagagatca ttgagaatgc agtcgagttc atcctccgct 200

ccatgtccag gagcacagga tttatggaat ttgatgataa tgaaggaaaa 250

cattcatcaa agtgacatcc tcaggacaca cccatgtggc tcctggacaa 300

tccaagagca gccaaatcct gcttttccag tttggctcca caagtcctcc 350

aggacagagc cctcaaagca actcccaacg agttctcagg attcaggctc 400

tggcttcaac caaacagaac tcattttgaa caccctgact gcatttttgc 450

ttttagaaaag ttagaataaa tatggcgctt tgggatcaca tagttgatgg 500

agaggaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 550

a 551

<210> 167

<211> 87
<212> PRT
<213> Homo sapiens

<400> 167
Met Ala Val Leu Val Leu Arg Leu Thr Val Val Leu Gly Leu Leu
1 5 10 15
Val Leu Phe Leu Thr Cys Tyr Ala Asp Asp Lys Pro Asp Lys Pro
20 25 30
Asp Asp Lys Pro Asp Asp Ser Gly Lys Asp Pro Lys Pro Asp Phe
35 40 45
Pro Lys Phe Leu Ser Leu Leu Gly Thr Glu Ile Ile Glu Asn Ala
50 55 60
Val Glu Phe Ile Leu Arg Ser Met Ser Arg Ser Thr Gly Phe Met
65 70 75
Glu Phe Asp Asp Asn Glu Gly Lys His Ser Ser Lys
80 85

<210> 168
<211> 1371
<212> DNA
<213> Homo sapiens

<400> 168
ggacgccagc gcctgcagag gctgagcagg gaaaaagcca gtgccccagc 50
ggaagcacag ctccagagctg gtctgccatg gacatcctgg tcccactcct 100
gcagctgctg gtgctgcttc ttaccctgcc cctgcacctc atggctctgc 150
tgggctgctg gcagcccctg tgcaaaagct acttccccta cctgatggcc 200
gtgctgactc ccaagagcaa ccgcaagatg gagagcaaga aacgggagct 250
cttcagccag ataaaggggc ttacaggagc ctccgggaaa gtggccctac 300
tggagctggg ctgcggaacc ggagccaact ttcagttcta cccaccgggc 350
tgcaggggtca cctgcctaga cccaaatccc cactttgaga agttcctgac 400
aaagagcatg gctgagaaca ggcacctcca atatgagcgg tttgtggtgg 450
ctcctggaga ggacatgaga cagctggctg atggctccat ggatgtggtg 500
gtctgcactc tgggtgctgtg ctctgtgcag agccaagga aggtcctgca 550
ggaggtccgg agagtactga gaccgggagg tgtgctcttt ttctgggagc 600
atgtggcaga accatatgga agctgggcct tcatgtggca gcaagttttc 650
gagcccacct ggaaacacat tggggatggc tgctgcctca ccagagagac 700

ctggaaggat cttgagaacg cccagttctc cgaaatccaa atggaacgac 750
 agccccctcc cttgaagtgg ctacctgttg ggccccacat catgggaaag 800
 gctgtcaaac aatctttccc aagctccaag gcactcattt gtccttccc 850
 cagcctccaa ttagaacaag ccaccaccca gcctatctat cttccactga 900
 gagggaccta gcagaatgag agaagacatt catgtaccac ctactagtcc 950
 ctctctcccc aacctctgcc agggcaatct ctaacttcaa tcccgcttc 1000
 gacagtgaaa aagctctact tctacgctga cccaggaggg aaacactagg 1050
 accctgttgt atcctcaact gcaagtttct ggactagtct cccaacgttt 1100
 gcctcccaat gttgtccctt tccttgcgtc ccatggtaaa gtcctctctg 1150
 ctttctctct gaggtacac ccatgcgtct ctaggaactg gtcacaaaag 1200
 tcatggtgcc tgcattccctg ccaagcccc ctgaccctct ctccccacta 1250
 ccaccttctt cctgagctgg gggcaccagg gagaatcaga gatgctgggg 1300
 atgccagagc aagactcaaa gaggcagagg ttttgttctc aaatatTTTT 1350
 taataaatag acgaaaccac g 1371

<210> 169

<211> 277

<212> PRT

<213> Homo sapiens

<400> 169

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asp | Ile | Leu | Val | Pro | Leu | Leu | Gln | Leu | Leu | Val | Leu | Leu | Leu |
| 1 | | | | 5 | | | | 10 | | | | | | 15 |
| Thr | Leu | Pro | Leu | His | Leu | Met | Ala | Leu | Leu | Gly | Cys | Trp | Gln | Pro |
| | | | | 20 | | | | 25 | | | | | | 30 |
| Leu | Cys | Lys | Ser | Tyr | Phe | Pro | Tyr | Leu | Met | Ala | Val | Leu | Thr | Pro |
| | | | | 35 | | | | 40 | | | | | | 45 |
| Lys | Ser | Asn | Arg | Lys | Met | Glu | Ser | Lys | Lys | Arg | Glu | Leu | Phe | Ser |
| | | | | 50 | | | | 55 | | | | | | 60 |
| Gln | Ile | Lys | Gly | Leu | Thr | Gly | Ala | Ser | Gly | Lys | Val | Ala | Leu | Leu |
| | | | | 65 | | | | 70 | | | | | | 75 |
| Glu | Leu | Gly | Cys | Gly | Thr | Gly | Ala | Asn | Phe | Gln | Phe | Tyr | Pro | Pro |
| | | | | 80 | | | | 85 | | | | | | 90 |
| Gly | Cys | Arg | Val | Thr | Cys | Leu | Asp | Pro | Asn | Pro | His | Phe | Glu | Lys |
| | | | | 95 | | | | 100 | | | | | | 105 |
| Phe | Leu | Thr | Lys | Ser | Met | Ala | Glu | Asn | Arg | His | Leu | Gln | Tyr | Glu |
| | | | | 110 | | | | 115 | | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Phe | Val | Val | Ala | Pro | Gly | Glu | Asp | Met | Arg | Gln | Leu | Ala | Asp |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Gly | Ser | Met | Asp | Val | Val | Val | Cys | Thr | Leu | Val | Leu | Cys | Ser | Val |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Gln | Ser | Pro | Arg | Lys | Val | Leu | Gln | Glu | Val | Arg | Arg | Val | Leu | Arg |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Pro | Gly | Gly | Val | Leu | Phe | Phe | Trp | Glu | His | Val | Ala | Glu | Pro | Tyr |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Gly | Ser | Trp | Ala | Phe | Met | Trp | Gln | Gln | Val | Phe | Glu | Pro | Thr | Trp |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Lys | His | Ile | Gly | Asp | Gly | Cys | Cys | Leu | Thr | Arg | Glu | Thr | Trp | Lys |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Asp | Leu | Glu | Asn | Ala | Gln | Phe | Ser | Glu | Ile | Gln | Met | Glu | Arg | Gln |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Pro | Pro | Pro | Leu | Lys | Trp | Leu | Pro | Val | Gly | Pro | His | Ile | Met | Gly |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Lys | Ala | Val | Lys | Gln | Ser | Phe | Pro | Ser | Ser | Lys | Ala | Leu | Ile | Cys |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Ser | Phe | Pro | Ser | Leu | Gln | Leu | Glu | Gln | Ala | Thr | His | Gln | Pro | Ile |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Tyr | Leu | Pro | Leu | Arg | Gly | Thr | | | | | | | | |
| | | | | 275 | | | | | | | | | | |

<210> 170
 <211> 1621
 <212> DNA
 <213> Homo sapiens

<400> 170
 gtgggattta tttgagtgc aagatcgtttt ctcagtgggtg gtggaagttg 50
 cctcatcgca ggcagatggt ggggctttgt ccgaacagct cccctctgcc 100
 agcttctgta gataagggtt aaaaactaat atttatatga cagaagaaaa 150
 agatgtcatt ccgtaaagta aacatcatca tcttggtcct ggctgttgct 200
 ctcttcttac tggttttgca ccataacttc ctcagcttga gcagtttggt 250
 aaggaatgag gttacagatt caggaattgt agggcctcaa cctatagact 300
 ttgtcccaaa tgctctccga catgcagtag atgggagaca agaggagatt 350
 cctgtggtca tcgctgcac tgaagacagg cttggggggg ccattgcagc 400
 tataaacagc attcagcaca aactcgcctc caatgtgatt ttctacattg 450

```

ttactctcaa caatacagca gaccatctcc ggtcctggct caacagtgat 500
tccctgaaaa gcatcagata caaaattgtc aattttgacc ctaaactttt 550
ggaaggaaaa gtaaaggagg atcctgacca gggggaatcc atgaaacctt 600
taacctttgc aaggttctac ttgccaattc tggttcccag cgcaaagaag 650
gccatataca tggatgatga tgtaattgtg caaggtgata ttcttgcctt 700
ttacaatata gcaactgaagc caggacatgc agctgcattt tcagaagatt 750
gtgattcagc ctctactaaa gttgtcatcc gtggagcagg aaaccagtac 800
aattacattg gctatcttga ctataaaaag gaaagaattc gtaagctttc 850
catgaaagcc agcacttgct catttaatcc tggagttttt gttgcaaacc 900
tgacggaatg gaaacgacag aatataacta accaactgga aaaatggatg 950
aaactcaatg tagaagaggg actgtatagc agaaccctgg ctggtagcat 1000
cacaacacct cctctgctta tcgtatttta tcaacagcac tctaccatcg 1050
atcctatgtg gaatgtccgc caccttgggt ccagtgtctg aaaacgatat 1100
tcacctcagt ttgtaaaggc tgccaagtta ctccattgga atggacattt 1150
gaagccatgg ggaaggactg cttcatatac tgatgtttgg gaaaaatggt 1200
atattccaga cccaacaggc aaattcaacc taatccgaag atataccgag 1250
atctcaaaca taaagtgaaa cagaatttga actgtaagca agcatttctc 1300
aggaagtcct ggaagatagc atgcatggga agtaacagtt gctaggcttc 1350
aatgcctatc ggtagcaagc catggaaaaa gatgtgtcag ctaggttaaag 1400
atgacaaact gccctgtctg gcagtcagct tcccagacag actatagact 1450
ataaatatgt ctccatctgc cttaccaagt gttttcttac tacaatgctg 1500
aatgactgga aagaagaact gatatggcta gttcagctag ctggtacaga 1550
taattcaaaa ctgctgttgg ttttaatttt gtaacctgtg gcctgatctg 1600
taaataaaac ttacattttt c 1621

```

<210> 171

<211> 371

<212> PRT

<213> Homo sapiens

<400> 171

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Phe | Arg | Lys | Val | Asn | Ile | Ile | Ile | Leu | Val | Leu | Ala | Val |
| 1 | | | | | 5 | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Leu | Phe | Leu | Leu | Val | Leu | His | His | Asn | Phe | Leu | Ser | Leu | Ser | 20 | 25 | 30 |
| Ser | Leu | Leu | Arg | Asn | Glu | Val | Thr | Asp | Ser | Gly | Ile | Val | Gly | Pro | 35 | 40 | 45 |
| Gln | Pro | Ile | Asp | Phe | Val | Pro | Asn | Ala | Leu | Arg | His | Ala | Val | Asp | 50 | 55 | 60 |
| Gly | Arg | Gln | Glu | Glu | Ile | Pro | Val | Val | Ile | Ala | Ala | Ser | Glu | Asp | 65 | 70 | 75 |
| Arg | Leu | Gly | Gly | Ala | Ile | Ala | Ala | Ile | Asn | Ser | Ile | Gln | His | Asn | 80 | 85 | 90 |
| Thr | Arg | Ser | Asn | Val | Ile | Phe | Tyr | Ile | Val | Thr | Leu | Asn | Asn | Thr | 95 | 100 | 105 |
| Ala | Asp | His | Leu | Arg | Ser | Trp | Leu | Asn | Ser | Asp | Ser | Leu | Lys | Ser | 110 | 115 | 120 |
| Ile | Arg | Tyr | Lys | Ile | Val | Asn | Phe | Asp | Pro | Lys | Leu | Leu | Glu | Gly | 125 | 130 | 135 |
| Lys | Val | Lys | Glu | Asp | Pro | Asp | Gln | Gly | Glu | Ser | Met | Lys | Pro | Leu | 140 | 145 | 150 |
| Thr | Phe | Ala | Arg | Phe | Tyr | Leu | Pro | Ile | Leu | Val | Pro | Ser | Ala | Lys | 155 | 160 | 165 |
| Lys | Ala | Ile | Tyr | Met | Asp | Asp | Asp | Val | Ile | Val | Gln | Gly | Asp | Ile | 170 | 175 | 180 |
| Leu | Ala | Leu | Tyr | Asn | Thr | Ala | Leu | Lys | Pro | Gly | His | Ala | Ala | Ala | 185 | 190 | 195 |
| Phe | Ser | Glu | Asp | Cys | Asp | Ser | Ala | Ser | Thr | Lys | Val | Val | Ile | Arg | 200 | 205 | 210 |
| Gly | Ala | Gly | Asn | Gln | Tyr | Asn | Tyr | Ile | Gly | Tyr | Leu | Asp | Tyr | Lys | 215 | 220 | 225 |
| Lys | Glu | Arg | Ile | Arg | Lys | Leu | Ser | Met | Lys | Ala | Ser | Thr | Cys | Ser | 230 | 235 | 240 |
| Phe | Asn | Pro | Gly | Val | Phe | Val | Ala | Asn | Leu | Thr | Glu | Trp | Lys | Arg | 245 | 250 | 255 |
| Gln | Asn | Ile | Thr | Asn | Gln | Leu | Glu | Lys | Trp | Met | Lys | Leu | Asn | Val | 260 | 265 | 270 |
| Glu | Glu | Gly | Leu | Tyr | Ser | Arg | Thr | Leu | Ala | Gly | Ser | Ile | Thr | Thr | 275 | 280 | 285 |
| Pro | Pro | Leu | Leu | Ile | Val | Phe | Tyr | Gln | Gln | His | Ser | Thr | Ile | Asp | 290 | 295 | 300 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Pro | Met | Trp | Asn | Val | Arg | His | Leu | Gly | Ser | Ser | Ala | Gly | Lys | Arg | |
| | | | 305 | | | | | | 310 | | | | | 315 | |
| | | | | | | | | | | | | | | | |
| Tyr | Ser | Pro | Gln | Phe | Val | Lys | Ala | Ala | Lys | Leu | Leu | His | Trp | Asn | |
| | | | 320 | | | | | | 325 | | | | | 330 | |
| | | | | | | | | | | | | | | | |
| Gly | His | Leu | Lys | Pro | Trp | Gly | Arg | Thr | Ala | Ser | Tyr | Thr | Asp | Val | |
| | | | 335 | | | | | | 340 | | | | | 345 | |
| | | | | | | | | | | | | | | | |
| Trp | Glu | Lys | Trp | Tyr | Ile | Pro | Asp | Pro | Thr | Gly | Lys | Phe | Asn | Leu | |
| | | | 350 | | | | | | 355 | | | | | 360 | |
| | | | | | | | | | | | | | | | |
| Ile | Arg | Arg | Tyr | Thr | Glu | Ile | Ser | Asn | Ile | Lys | | | | | |
| | | | 365 | | | | | | 370 | | | | | | |

<210> 172
 <211> 585
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 71, 76, 86, 91, 162, 220, 269, 281
 <223> unknown base

<400> 172
 tgggtttttgc cccataaatt ccctcagctt gagcagtttg ttaaggaatg 50
 aggttacaga ttcaggaatt ntaggnccctc aacctntaga ntttgtccca 100
 aatgttctcc gacatgcagt agatgggaga caagaggaga ttctgtggt 150
 catcgctgca tntgaagaca ggcttggggg ggccattgca gctataaaca 200
 gcattcagca caacactcgn tccaatgtga ttttctacat tgttactctc 250
 aacaatacag cagaccatnt ccggtcctgg ntcaacagtg attccctgaa 300
 aagcatcaga taaaaaattg tcaattttga ccctaaactt ttggaaggaa 350
 aagtaaagga ggatcctgac cagggggaat ccatgaaacc tttaaccttt 400
 gcaaggttct acttgccaat tctggttccc agcgcaaaga aggccatata 450
 catggatgat gatgtaattg tgcaaggtga tattcttgcc ctttacaata 500
 cagcactgaa gccaggacat gcagctgcat tttcagaaga ttgtgattca 550
 gcctctacta aagttgtcat ccgtggagca ggaaa 585

<210> 173
 <211> 1866
 <212> DNA
 <213> Homo sapiens

<400> 173

cgacgctcta gcggttaccg ctgcgggctg gctggggcgta gtggggctgc 50
gcggttgcca cggagctaga gggcaagtgt gctcggccca gcgtgcaggg 100
aacgcgggcg gccagacaac gggctgggct cgggggcctg cggcgcgggc 150
gctgagctgg cagggcgggg cggggcgcgg gctgcatccg catctcctcc 200
atcgctgca gtaagggcgg ccgcggcgag cctttgaggg gaacgacttg 250
tcggagccct aaccaggggt gtctctgagc ctgggtggat ccccgagcgc 300
tcacatcact ttccgatcac ttcaaagtgg ttaaaaacta atatttatat 350
gacagaagaa aaagatgtca ttccgtaaag taaacatcat catcttggtc 400
ctgggctgtt gctctcttct tactgggttt gcaccataac ttctcagct 450
tgaggcagtt tgttaaggaa tgaggttaca gattcaggaa ttgtagggcc 500
tcaacctata ggactttgtc ccaaagtctc tccgacatgc agtagatggg 550
agacaagagg agattcctgt ggtcatcgct gcatctgaag acaggcttgg 600
gggggccatt gcagctataa acagcattca gcacaacact cgctccaatg 650
tgattttcta cattgttact ctcaacaata cagcagacca tctccgtcc 700
tgggctcaac agtgattccc tgaaaagcat cagatacaaa attgtcaatt 750
ttgaccctaa acttttggaa ggaaaagtaa aggaggatcc tgaccagggg 800
gaatccatga aacctttaac ctttgcaagg ttctacttgc caattctggg 850
ttcccagcgc aaagaaggcc atatacatgg atgatgatgt aattgtgcaa 900
ggtgatattc ttgcccttta caatacagca ctgaagccag gacatgcagc 950
tgcattttca gaagattgtg attcagcctc tactaaagtt gtcatccgtg 1000
gagcaggaaa ccagtacaat tacattggct atcttgacta taaaaaggaa 1050
agaattcgta agctttccat gaaagccagc acttgctcat ttaatcctgg 1100
agtttttggt gcaaacctga cggaatggaa acgacagaat ataactaacc 1150
aactggaaaa atggatgaaa ctcaatgtag aagagggact gtatagcaga 1200
accctggctg gtagcatcac aacacctcct ctgcttatcg tattttatca 1250
acagcactct accatcgatc ctatgtggaa tgtccgccac cttggttcca 1300
gtgctggaaa acgatattca cctcagtttg taaaggctgc caagttactc 1350
cattggaatg gacatttgaa gccatgggga aggactgctt catatactga 1400
tgtttgggga aaaatgggat attccagacc caacaggcaa attcaaccta 1450

atccgaagat ataccgagat ctcaaacata aagtgaacaa gaatttgaac 1500
tgtaagcaag catttctcag gaagtcctgg aagatagcat gcgtgggaag 1550
taacagttgc taggcttcaa tgcctatcgg tagcaagcca tggaaaaaga 1600
tgtgtcagct aggtaaagat gacaaactgc cctgtctggc agtcagcttc 1650
ccagacagac tatagactat aaatatgtct ccatctgcct taccaagtgt 1700
tttcttacta caatgctgaa tgactggaaa gaagaactga tatggctagt 1750
tcagctagct ggtacagata attcaaaact gctgttggtt ttaattttgt 1800
aacctgtggc ctgatctgta aataaaactt acatttttca ataggtaaaa 1850
aaaaaaaaaa aaaaaa 1866

<210> 174

<211> 823

<212> DNA

<213> Homo sapiens

<400> 174

ctgcaggtag acatctccac tgcccaggaa tcactgagcg tgcagacagc 50
acagcctcct ctgaaggccg gccataccag agtcctgcct cggcatgggc 100
ctcaccattg aggcagctcc actgtctgtg ctggctctgag ggtgctgcct 150
gtcatggggg cagccatctc ccagggggcc ctcacgcga tcgtctgcaa 200
cggctctctg ggcttcttgc tgctgctgct ctgggtcatc ctctgctggg 250
cctgccattc tcgtctgccg acgttgactc tctctctgaa tccagtccca 300
actccagccc tggccctgt cctgagaagg cccaccacc ccagaagccc 350
agccatgaag gcagctacct gctgcagccc tgaaggcccc tggcctagcc 400
tggagcccag gacctaagtc cacctcacct agagcctgga attaggatcc 450
cagagttcag ccagcctggg gtccagaact caagagtccg cctgcttggg 500
gctggacca gcggcccaga gtctagccag cttggctcca ataggagctc 550
agtggcccta aggagatggg cctgggggtg gggcttatga gttggtgcta 600
gagccagggc catctggact atgctccatc ccaaggcca agggtcaggg 650
gccgggtcca ctctttccct aggctgagca cctctaggcc ctctaggttg 700
gggaagcaaa ctggaacca tggcaataat aggagggtgt ccaggctggg 750
cccctcccct ggtcctccca gtgtttgctg gataataaat ggaactatgg 800

ctctaaaaaa aaaaaaaaaa aaa 823

<210> 175

<211> 87

<212> PRT

<213> Homo sapiens

<400> 175

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Ala | Ala | Ile | Ser | Gln | Gly | Ala | Leu | Ile | Ala | Ile | Val | Cys |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Gly | Leu | Val | Gly | Phe | Leu | Leu | Leu | Leu | Leu | Trp | Val | Ile | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Trp | Ala | Cys | His | Ser | Arg | Leu | Pro | Thr | Leu | Thr | Leu | Ser | Leu |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Pro | Val | Pro | Thr | Pro | Ala | Leu | Ala | Pro | Val | Leu | Arg | Arg | Pro |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | His | Pro | Arg | Ser | Pro | Ala | Met | Lys | Ala | Ala | Thr | Cys | Cys | Ser |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Glu | Gly | Pro | Trp | Pro | Ser | Leu | Glu | Pro | Arg | Thr |
| | | | | 80 | | | | | 85 | | |

<210> 176

<211> 1660

<212> DNA

<213> Homo sapiens

<400> 176

gtttgaattc cttcaactat acccacagtc caaaagcaga ctccactgtgt 50

cccaggctac cagttcctcc aagcaagtca tttcccttat ttaaccgatg 100

tgtccctcaa acacctgagt gctactccct atttgcattt gttttgataa 150

atgatgttga caccctccac cgaattctaa gtggaatcat gtcgggaaga 200

gatacaatcc ttggcctgtg taccctcgca ttagccttgt ctttggccat 250

gatgtttacc ttccagattca tcaccaccct tctggttcac attttcattt 300

cattggttat tttgggattg ttgtttgtct gcggtgtttt atggtggctg 350

tattatgact ataccaacga cctcagcata gaattggaca cagaaaggga 400

aaatatgaag tgcgtgctgg ggtttgctat cgtatccaca ggcattcacg 450

cagtgtgct cgtcttgatt tttgtttctca gaaagagaat aaaattgaca 500

gttgagcttt tccaaatcac aaataaagcc atcagcagtg ctcccttcct 550

gctgttccag ccactgtgga catttgccat cctcattttc ttctgggtcc 600

tctgggtggc tgtgtgtgtg agcctgggaa ctgcaggagc tgcccagggt 650

atggaaggcg gccaaagtga atataagccc ctttcgggca ttcggtacat 700
 gtggtcgtac catttaattg gcctcatctg gactagtga ttcacacctg 750
 cgtgccagca aatgactata gctggggcag tggttacttg ttatttcaac 800
 agaagtaaaa atgacacctc tgatcatccc atcctttcgt ctctctccat 850
 tctcttcttc taccatcaag gaaccgttgt gaaagggta tttttaatct 900
 ctgtggtgag gattccgaga atcattgtca tgtacatgca aaacgcactg 950
 aaagaacagc agcatgggtgc attgtccagg tacctgttcc gatgctgcta 1000
 ctgctgtttc tgggtgtcttg acaaatacct gctccatctc aaccagaatg 1050
 catatactac aactgctatt aatgggacag atttctgtac atcagcaaaa 1100
 gatgcattca aaatcttgtc caagaactca agtcacttta catctattaa 1150
 ctgcttttga gacttcataa tttttctagg aaaggtgtta gtggtgtgtt 1200
 tcactgtttt tggaggactc atggccttta actacaatcg ggcattccag 1250
 gtgtgggcag tccctctgtt attggtagct tttttgcct acttagtagc 1300
 ccatagtttt ttatctgtgt ttgaaactgt gctggatgca cttttcctgt 1350
 gttttgctgt tgatctggaa acaaatgatg gatcgtcaga aaagccctac 1400
 tttatggatc aagaatttct gagtttcgta aaaaggagca acaaattaaa 1450
 caatgcaagg gcacagcagg acaagcactc attaaggaat gaggaggga 1500
 cagaactcca ggccattgtg agatagatac ccatttaggt atctgtacct 1550
 ggaaaacatt tccttctaag agccatttac agaatagaag atgagaccac 1600
 tagagaaaag ttagtgaatt tttttttaa agacctaata aaccctattc 1650
 ttcctcaaaa 1660

<210> 177
 <211> 445
 <212> PRT
 <213> Homo sapiens

<400> 177
 Met Ser Gly Arg Asp Thr Ile Leu Gly Leu Cys Ile Leu Ala Leu
 1 5 10 15
 Ala Leu Ser Leu Ala Met Met Phe Thr Phe Arg Phe Ile Thr Thr
 20 25 30
 Leu Leu Val His Ile Phe Ile Ser Leu Val Ile Leu Gly Leu Leu
 35 40 45

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Val | Cys | Gly | Val | Leu | Trp | Trp | Leu | Tyr | Tyr | Asp | Tyr | Thr | Asn | 50 | 55 | 60 |
| Asp | Leu | Ser | Ile | Glu | Leu | Asp | Thr | Glu | Arg | Glu | Asn | Met | Lys | Cys | 65 | 70 | 75 |
| Val | Leu | Gly | Phe | Ala | Ile | Val | Ser | Thr | Gly | Ile | Thr | Ala | Val | Leu | 80 | 85 | 90 |
| Leu | Val | Leu | Ile | Phe | Val | Leu | Arg | Lys | Arg | Ile | Lys | Leu | Thr | Val | 95 | 100 | 105 |
| Glu | Leu | Phe | Gln | Ile | Thr | Asn | Lys | Ala | Ile | Ser | Ser | Ala | Pro | Phe | 110 | 115 | 120 |
| Leu | Leu | Phe | Gln | Pro | Leu | Trp | Thr | Phe | Ala | Ile | Leu | Ile | Phe | Phe | 125 | 130 | 135 |
| Trp | Val | Leu | Trp | Val | Ala | Val | Leu | Leu | Ser | Leu | Gly | Thr | Ala | Gly | 140 | 145 | 150 |
| Ala | Ala | Gln | Val | Met | Glu | Gly | Gly | Gln | Val | Glu | Tyr | Lys | Pro | Leu | 155 | 160 | 165 |
| Ser | Gly | Ile | Arg | Tyr | Met | Trp | Ser | Tyr | His | Leu | Ile | Gly | Leu | Ile | 170 | 175 | 180 |
| Trp | Thr | Ser | Glu | Phe | Ile | Leu | Ala | Cys | Gln | Gln | Met | Thr | Ile | Ala | 185 | 190 | 195 |
| Gly | Ala | Val | Val | Thr | Cys | Tyr | Phe | Asn | Arg | Ser | Lys | Asn | Asp | Pro | 200 | 205 | 210 |
| Pro | Asp | His | Pro | Ile | Leu | Ser | Ser | Leu | Ser | Ile | Leu | Phe | Phe | Tyr | 215 | 220 | 225 |
| His | Gln | Gly | Thr | Val | Val | Lys | Gly | Ser | Phe | Leu | Ile | Ser | Val | Val | 230 | 235 | 240 |
| Arg | Ile | Pro | Arg | Ile | Ile | Val | Met | Tyr | Met | Gln | Asn | Ala | Leu | Lys | 245 | 250 | 255 |
| Glu | Gln | Gln | His | Gly | Ala | Leu | Ser | Arg | Tyr | Leu | Phe | Arg | Cys | Cys | 260 | 265 | 270 |
| Tyr | Cys | Cys | Phe | Trp | Cys | Leu | Asp | Lys | Tyr | Leu | Leu | His | Leu | Asn | 275 | 280 | 285 |
| Gln | Asn | Ala | Tyr | Thr | Thr | Thr | Ala | Ile | Asn | Gly | Thr | Asp | Phe | Cys | 290 | 295 | 300 |
| Thr | Ser | Ala | Lys | Asp | Ala | Phe | Lys | Ile | Leu | Ser | Lys | Asn | Ser | Ser | 305 | 310 | 315 |
| His | Phe | Thr | Ser | Ile | Asn | Cys | Phe | Gly | Asp | Phe | Ile | Ile | Phe | Leu | 320 | 325 | 330 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Lys | Val | Leu | Val | Val | Cys | Phe | Thr | Val | Phe | Gly | Gly | Leu | Met |
| | | | 335 | | | | | | 340 | | | | | 345 |
| Ala | Phe | Asn | Tyr | Asn | Arg | Ala | Phe | Gln | Val | Trp | Ala | Val | Pro | Leu |
| | | | 350 | | | | | | 355 | | | | | 360 |
| Leu | Leu | Val | Ala | Phe | Phe | Ala | Tyr | Leu | Val | Ala | His | Ser | Phe | Leu |
| | | | 365 | | | | | | 370 | | | | | 375 |
| Ser | Val | Phe | Glu | Thr | Val | Leu | Asp | Ala | Leu | Phe | Leu | Cys | Phe | Ala |
| | | | 380 | | | | | | 385 | | | | | 390 |
| Val | Asp | Leu | Glu | Thr | Asn | Asp | Gly | Ser | Ser | Glu | Lys | Pro | Tyr | Phe |
| | | | 395 | | | | | | 400 | | | | | 405 |
| Met | Asp | Gln | Glu | Phe | Leu | Ser | Phe | Val | Lys | Arg | Ser | Asn | Lys | Leu |
| | | | 410 | | | | | | 415 | | | | | 420 |
| Asn | Asn | Ala | Arg | Ala | Gln | Gln | Asp | Lys | His | Ser | Leu | Arg | Asn | Glu |
| | | | 425 | | | | | | 430 | | | | | 435 |
| Glu | Gly | Thr | Glu | Leu | Gln | Ala | Ile | Val | Arg | | | | | |
| | | | 440 | | | | | | 445 | | | | | |

<210> 178
 <211> 2773
 <212> DNA
 <213> Homo sapiens

<400> 178
 gttcgattag ctctctgag aagaagagaa aagggttcttg gacctctccc 50
 tgtttcttcc ttagaataat ttgtatggga tttgtgatgc aggaaagcct 100
 aagggaaaaa gaatattcat tctgtgtggt gaaaattttt tgaaaaaaa 150
 attgccttct tcaaacaagg gtgtcattct gatatttatg aggactgttg 200
 ttctcactat gaaggcatct gttattgaaa tggttccttgt tttgctggtg 250
 actggagtac attcaaaca agaaacggca aagaagatta aaaggcccaa 300
 gttcactgtg cctcagatca actgcgatgt caaagccgga aagatcatcg 350
 atcctgagtt cattgtgaaa tgtccagcag gatgccaaga ccccaaatac 400
 catgtttatg gcactgacgt gtatgcatcc tactccagtg tgtgtggcgc 450
 tgccgtacac agtgggtgtgc ttgataattc aggagggaaa atacttgttc 500
 ggaaggttgc tggacagtct gggtacaaag ggagttattc caacggtgtc 550
 caatcgttat ccctaccacg atggagagaa tcctttatcg tcttagaaag 600
 taaacccaaa aagggtgtaa cctacccatc agctcttaca tactcatcat 650

cgaaaagtcc agctgcccac gcaggtgaga ccacaaaagc ctatcagagg 700
ccacctattc cagggacaaac tgcacagccg gtcactctga tgcagcttct 750
ggctgtcact gtagctgtgg ccacccccac caccttgcca aggccatccc 800
cttctgctgc ttctaccacc agcatcccca gaccacaatc agtggggccac 850
aggagccagg agatggatct ctggtccact gccacctaca caagcagcca 900
aaacaggccc agagctgata caggtatcca aaggcaagat ccttcaggag 950
ctgccttcca gaaacctgtt ggagcggatg tcagcctggg acttgttcca 1000
aaagaagaat tgagcacaca gtctttggag ccagtatccc tgggagatcc 1050
aaactgcaaa attgacttgt cgtttttaat tgatgggagc accagcattg 1100
gcaaacggcg attccgaatc cagaagcagc tcctggctga tgttgcccaa 1150
gctcttgaca ttggccctgc cgggtccactg atgggtgttg tccagtatgg 1200
agacaaccct gctactcact ttaacctcaa gacacacagc aattctcgag 1250
atctgaagac agccatagag aaaattactc agagaggagg actttctaata 1300
gtaggtcggg ccatctcctt tgtgaccaag aacttctttt ccaaagccaa 1350
tggaacacaga agcggggctc ccaatgtggt ggtggtgatg gtggatggct 1400
ggcccacgga caaagtggag gaggcttcaa gacttgcgag agagtcagga 1450
atcaacattt tcttcatcac cattgaaggt gctgctgaaa atgagaagca 1500
gtatgtggtg gagcccaact ttgcaaaca ggcggtgtgc agaacaacg 1550
gcttctactc gctccacgtg cagagctggg ttggcctcca caagaccctg 1600
cagcctctgg tgaagcgggt ctgcgacact gaccgcctgg cctgcagcaa 1650
gacctgcttg aactcggctg acattggctt cgtcatcgac ggctccagca 1700
gtgtggggac gggcaacttc cgcaccgtcc tccagtttgt gaccaacctc 1750
accaaagagt ttgagatttc cgacacggac acgcgcatcg gggccgtgca 1800
gtacacctac gaacagcggc tggagtttgg gttcgacaag tacagcagca 1850
agcctgacat cctcaacgcc atcaagaggg tgggctactg gagtgggtggc 1900
accagcacgg gggctgccat caacttcgcc ctggagcagc tcttcaagaa 1950
gtccaagccc aacaagagga agttaatgat cctcatcacc gacgggaggt 2000
cctacgacga cgtccggatc ccagccatgg ctgcccattc gaagggagtg 2050
atcacctatg cgatagggct tgcctgggct gcccaagagg agctagaagt 2100

cattgccact caccgcca gagaccactc cttctttgtg gacgagtttg 2150
acaacctcca tcagtatgtc cccaggatca tccagaacat ttgtacagag 2200
ttcaactcac agcctcggaa ctgaattcag agcaggcaga gcaccagcaa 2250
gtgctgcttt actaactgac gtgttggacc accccaccgc ttaatggggc 2300
acgcacgggtg catcaagtct tgggcagggc atggagaaac aaatgtcttg 2350
ttattattct ttgccatcat gctttttcat attccaaaac ttggagttac 2400
aaagatgatc acaaacgtat agaatgagcc aaaaggctac atcatgttga 2450
gggtgctgga gattttacat tttgacaatt gttttcaaaa taaatgttcg 2500
gaatacagtg cagcccttac gacaggctta cgtagagctt ttgtgagatt 2550
tttaagttgt tattttctgat ttgaactctg taaccctcag caagtttcat 2600
ttttgtcatg acaatgtagg aattgctgaa ttaaattgtt agaaggatga 2650
aaaataaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2700
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2750
aaaaaaaaaa aaaaaaaaaa aag 2773

<210> 179
<211> 678
<212> PRT
<213> Homo sapiens

<400> 179
Met Arg Thr Val Val Leu Thr Met Lys Ala Ser Val Ile Glu Met
1 5 10 15
Phe Leu Val Leu Leu Val Thr Gly Val His Ser Asn Lys Glu Thr
20 25 30
Ala Lys Lys Ile Lys Arg Pro Lys Phe Thr Val Pro Gln Ile Asn
35 40 45
Cys Asp Val Lys Ala Gly Lys Ile Ile Asp Pro Glu Phe Ile Val
50 55 60
Lys Cys Pro Ala Gly Cys Gln Asp Pro Lys Tyr His Val Tyr Gly
65 70 75
Thr Asp Val Tyr Ala Ser Tyr Ser Ser Val Cys Gly Ala Ala Val
80 85 90
His Ser Gly Val Leu Asp Asn Ser Gly Gly Lys Ile Leu Val Arg
95 100 105
Lys Val Ala Gly Gln Ser Gly Tyr Lys Gly Ser Tyr Ser Asn Gly

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Val | Gln | Ser | Leu | Ser | Leu | Pro | Arg | Trp | Arg | Glu | Ser | Phe | Ile | Val | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Leu | Glu | Ser | Lys | Pro | Lys | Lys | Gly | Val | Thr | Tyr | Pro | Ser | Ala | Leu | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Thr | Tyr | Ser | Ser | Ser | Lys | Ser | Pro | Ala | Ala | Gln | Ala | Gly | Glu | Thr | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Thr | Lys | Ala | Tyr | Gln | Arg | Pro | Pro | Ile | Pro | Gly | Thr | Thr | Ala | Gln | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Pro | Val | Thr | Leu | Met | Gln | Leu | Leu | Ala | Val | Thr | Val | Ala | Val | Ala | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Thr | Pro | Thr | Thr | Leu | Pro | Arg | Pro | Ser | Pro | Ser | Ala | Ala | Ser | Thr | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Thr | Ser | Ile | Pro | Arg | Pro | Gln | Ser | Val | Gly | His | Arg | Ser | Gln | Glu | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Met | Asp | Leu | Trp | Ser | Thr | Ala | Thr | Tyr | Thr | Ser | Ser | Gln | Asn | Arg | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Pro | Arg | Ala | Asp | Pro | Gly | Ile | Gln | Arg | Gln | Asp | Pro | Ser | Gly | Ala | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Ala | Phe | Gln | Lys | Pro | Val | Gly | Ala | Asp | Val | Ser | Leu | Gly | Leu | Val | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Pro | Lys | Glu | Glu | Leu | Ser | Thr | Gln | Ser | Leu | Glu | Pro | Val | Ser | Leu | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Gly | Asp | Pro | Asn | Cys | Lys | Ile | Asp | Leu | Ser | Phe | Leu | Ile | Asp | Gly | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Ser | Thr | Ser | Ile | Gly | Lys | Arg | Arg | Phe | Arg | Ile | Gln | Lys | Gln | Leu | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Leu | Ala | Asp | Val | Ala | Gln | Ala | Leu | Asp | Ile | Gly | Pro | Ala | Gly | Pro | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Leu | Met | Gly | Val | Val | Gln | Tyr | Gly | Asp | Asn | Pro | Ala | Thr | His | Phe | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Asn | Leu | Lys | Thr | His | Thr | Asn | Ser | Arg | Asp | Leu | Lys | Thr | Ala | Ile | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Glu | Lys | Ile | Thr | Gln | Arg | Gly | Gly | Leu | Ser | Asn | Val | Gly | Arg | Ala | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Ile | Ser | Phe | Val | Thr | Lys | Asn | Phe | Phe | Ser | Lys | Ala | Asn | Gly | Asn | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Arg | Ser | Gly | Ala | Pro | Asn | Val | Val | Val | Val | Met | Val | Asp | Gly | Trp | |

| | 395 | 400 | 405 |
|-----------------|-------------------------|-------------------------|-----|
| Pro Thr Asp Lys | Val Glu Glu Ala Ser | Arg Leu Ala Arg Glu Ser | |
| | 410 | 415 | 420 |
| Gly Ile Asn Ile | Phe Phe Ile Thr Ile | Glu Gly Ala Ala Glu Asn | |
| | 425 | 430 | 435 |
| Glu Lys Gln Tyr | Val Val Glu Pro Asn Phe | Ala Asn Lys Ala Val | |
| | 440 | 445 | 450 |
| Cys Arg Thr Asn | Gly Phe Tyr Ser Leu His | Val Gln Ser Trp Phe | |
| | 455 | 460 | 465 |
| Gly Leu His Lys | Thr Leu Gln Pro Leu Val | Lys Arg Val Cys Asp | |
| | 470 | 475 | 480 |
| Thr Asp Arg Leu | Ala Cys Ser Lys Thr Cys | Leu Asn Ser Ala Asp | |
| | 485 | 490 | 495 |
| Ile Gly Phe Val | Ile Asp Gly Ser Ser Ser | Val Gly Thr Gly Asn | |
| | 500 | 505 | 510 |
| Phe Arg Thr Val | Leu Gln Phe Val Thr Asn | Leu Thr Lys Glu Phe | |
| | 515 | 520 | 525 |
| Glu Ile Ser Asp | Thr Asp Thr Arg Ile Gly | Ala Val Gln Tyr Thr | |
| | 530 | 535 | 540 |
| Tyr Glu Gln Arg | Leu Glu Phe Gly Phe Asp | Lys Tyr Ser Ser Lys | |
| | 545 | 550 | 555 |
| Pro Asp Ile Leu | Asn Ala Ile Lys Arg Val | Gly Tyr Trp Ser Gly | |
| | 560 | 565 | 570 |
| Gly Thr Ser Thr | Gly Ala Ala Ile Asn Phe | Ala Leu Glu Gln Leu | |
| | 575 | 580 | 585 |
| Phe Lys Lys Ser | Lys Pro Asn Lys Arg Lys | Leu Met Ile Leu Ile | |
| | 590 | 595 | 600 |
| Thr Asp Gly Arg | Ser Tyr Asp Asp Val Arg | Ile Pro Ala Met Ala | |
| | 605 | 610 | 615 |
| Ala His Leu Lys | Gly Val Ile Thr Tyr Ala | Ile Gly Val Ala Trp | |
| | 620 | 625 | 630 |
| Ala Ala Gln Glu | Glu Leu Glu Val Ile Ala | Thr His Pro Ala Arg | |
| | 635 | 640 | 645 |
| Asp His Ser Phe | Phe Val Asp Glu Phe Asp | Asn Leu His Gln Tyr | |
| | 650 | 655 | 660 |
| Val Pro Arg Ile | Ile Gln Asn Ile Cys Thr | Glu Phe Asn Ser Gln | |
| | 665 | 670 | 675 |

Pro Arg Asn

<210> 180
<211> 1759
<212> DNA
<213> Homo sapiens

<400> 180
caggatgaac tggttgcagt ggctgctgct gctgcggggg cgctgagagg 50
acacgagctc tatgcctttc cggctgctca tcccgctcgg cctcctgtgc 100
gcgctgctgc ctcagcacca tgggtgcgcca ggtcccgacg gctccgcgcc 150
agatcccgcc cactacagtt tttctctgac tctaattgat gcactggaca 200
ccttgctgat tttggggaat gtctcagaat tccaaagagt ggttgaagtg 250
ctccaggaca gcgtggactt tgatattgat gtgaacgcct ctgtgtttga 300
aacaacatt cgagtggtag gaggactcct gtctgctcat ctgctctcca 350
agaaggctgg ggtggaagta gaggctggat ggccctgttc cgggcctctc 400
ctgagaatgg ctgaggaggc ggcccgaaaa ctctcccag cctttcagac 450
ccccactggc atgccatatg gaacagtga cttacttcat ggctgaacc 500
caggagagac ccctgtcacc tgtacggcag ggattgggac cttcattgtt 550
gaatttgcca ccctgagcag cctcactggg gaccgggtgt tcgaagatgt 600
ggccagagtg gctttgatgc gcctctggga gagccggtca gatatcgggc 650
tggtcggcaa ccacattgat gtgctcactg gcaagtgggt ggcccaggac 700
gcaggcatcg gggctggcgt ggactcctac tttgagtact tggtgaaagg 750
agccatcctg cttcaggata agaagctcat ggccatgttc ctagagtata 800
acaaagccat ccggaactac acccgcttcg atgactggta cctgtgggtt 850
cagatgtaca aggggactgt gtccatgcca gtcttccagt ccttgagggc 900
ctactggcct ggtcttcaga gcctcattgg agacattgac aatgccatga 950
ggaccttct caactactac actgtatgga agcagtttgg ggggctcccg 1000
gaattctaca acattcctca gggatacaca gtggagaagc gagagggcta 1050
cccacttcgg ccagaactta ttgaaagcgc aatgtacctc taccgtgcca 1100
cgggggatcc caccctocta gaactcggaa gagatgctgt ggaatccatt 1150
gaaaaaatca gcaagggtga gtgcggattht gcaacaatca aagatctgcg 1200
agaccacaag ctggacaacc gcatggagtc gttcttctctg gccgagactg 1250

tgaataacct ctacctcctg tttgacccaa ccaacttcat ccacaacaat 1300
 ggggtccacct tcgacgcggt gatcaccccc tatggggagt gcatcctggg 1350
 gggtggggggg tacatcttca acacagaagc tcaccccatc gaccttgccg 1400
 ccctgcactg ctgccagagg ctgaaggaag agcagtggga ggtggaggac 1450
 ttgatgaggg aattctactc tctcaaacgg agcaggtcga aatttcagaa 1500
 aaacactggt agttcggggc catgggaacc tccagcaagg ccaggaacac 1550
 tcttctcacc agaaaaccat gaccaggcaa gggagaggaa gcctgccaaa 1600
 cagaagggtcc cacttctcag ctgccccagt cagcccttca cctccaagtt 1650
 ggcattactg ggacaggttt tcctagactc ctcataacca ctggataatt 1700
 tttttatttt tatttttttg aggctaaact ataataaatt gcttttggct 1750
 atcataaaa 1759

<210> 181
 <211> 541
 <212> PRT
 <213> Homo sapiens

<400> 181
 Met Pro Phe Arg Leu Leu Ile Pro Leu Gly Leu Leu Cys Ala Leu
 1 5 10 15
 Leu Pro Gln His His Gly Ala Pro Gly Pro Asp Gly Ser Ala Pro
 20 25 30
 Asp Pro Ala His Tyr Ser Phe Ser Leu Thr Leu Ile Asp Ala Leu
 35 40 45
 Asp Thr Leu Leu Ile Leu Gly Asn Val Ser Glu Phe Gln Arg Val
 50 55 60
 Val Glu Val Leu Gln Asp Ser Val Asp Phe Asp Ile Asp Val Asn
 65 70 75
 Ala Ser Val Phe Glu Thr Asn Ile Arg Val Val Gly Gly Leu Leu
 80 85 90
 Ser Ala His Leu Leu Ser Lys Lys Ala Gly Val Glu Val Glu Ala
 95 100 105
 Gly Trp Pro Cys Ser Gly Pro Leu Leu Arg Met Ala Glu Glu Ala
 110 115 120
 Ala Arg Lys Leu Leu Pro Ala Phe Gln Thr Pro Thr Gly Met Pro
 125 130 135
 Tyr Gly Thr Val Asn Leu Leu His Gly Val Asn Pro Gly Glu Thr

| | 140 | | 145 | | 150 |
|-----------------|---------------------|---------------------|-----|--|-----|
| Pro Val Thr Cys | Thr Ala Gly Ile Gly | Thr Phe Ile Val Glu | Phe | | |
| | 155 | | 160 | | 165 |
| Ala Thr Leu Ser | Ser Leu Thr Gly Asp | Pro Val Phe Glu Asp | Val | | |
| | 170 | | 175 | | 180 |
| Ala Arg Val Ala | Leu Met Arg Leu Trp | Glu Ser Arg Ser Asp | Ile | | |
| | 185 | | 190 | | 195 |
| Gly Leu Val Gly | Asn His Ile Asp Val | Leu Thr Gly Lys Trp | Val | | |
| | 200 | | 205 | | 210 |
| Ala Gln Asp Ala | Gly Ile Gly Ala Gly | Val Asp Ser Tyr Phe | Glu | | |
| | 215 | | 220 | | 225 |
| Tyr Leu Val Lys | Gly Ala Ile Leu Leu | Gln Asp Lys Lys Leu | Met | | |
| | 230 | | 235 | | 240 |
| Ala Met Phe Leu | Glu Tyr Asn Lys Ala | Ile Arg Asn Tyr Thr | Arg | | |
| | 245 | | 250 | | 255 |
| Phe Asp Asp Trp | Tyr Leu Trp Val Gln | Met Tyr Lys Gly Thr | Val | | |
| | 260 | | 265 | | 270 |
| Ser Met Pro Val | Phe Gln Ser Leu Glu | Ala Tyr Trp Pro Gly | Leu | | |
| | 275 | | 280 | | 285 |
| Gln Ser Leu Ile | Gly Asp Ile Asp Asn | Ala Met Arg Thr Phe | Leu | | |
| | 290 | | 295 | | 300 |
| Asn Tyr Tyr Thr | Val Trp Lys Gln Phe | Gly Gly Leu Pro Glu | Phe | | |
| | 305 | | 310 | | 315 |
| Tyr Asn Ile Pro | Gln Gly Tyr Thr Val | Glu Lys Arg Glu Gly | Tyr | | |
| | 320 | | 325 | | 330 |
| Pro Leu Arg Pro | Glu Leu Ile Glu Ser | Ala Met Tyr Leu Tyr | Arg | | |
| | 335 | | 340 | | 345 |
| Ala Thr Gly Asp | Pro Thr Leu Leu Glu | Leu Gly Arg Asp Ala | Val | | |
| | 350 | | 355 | | 360 |
| Glu Ser Ile Glu | Lys Ile Ser Lys Val | Glu Cys Gly Phe Ala | Thr | | |
| | 365 | | 370 | | 375 |
| Ile Lys Asp Leu | Arg Asp His Lys Leu | Asp Asn Arg Met Glu | Ser | | |
| | 380 | | 385 | | 390 |
| Phe Phe Leu Ala | Glu Thr Val Lys Tyr | Leu Tyr Leu Leu Phe | Asp | | |
| | 395 | | 400 | | 405 |
| Pro Thr Asn Phe | Ile His Asn Asn Gly | Ser Thr Phe Asp Ala | Val | | |
| | 410 | | 415 | | 420 |
| Ile Thr Pro Tyr | Gly Glu Cys Ile Leu | Gly Ala Gly Gly Tyr | Ile | | |

| | | | | | |
|---|-----|--|-----|--|-----|
| | 425 | | 430 | | 435 |
| Phe Asn Thr Glu Ala His Pro Ile Asp Leu Ala Ala Leu His Cys | | | | | |
| | 440 | | 445 | | 450 |
| Cys Gln Arg Leu Lys Glu Glu Gln Trp Glu Val Glu Asp Leu Met | | | | | |
| | 455 | | 460 | | 465 |
| Arg Glu Phe Tyr Ser Leu Lys Arg Ser Arg Ser Lys Phe Gln Lys | | | | | |
| | 470 | | 475 | | 480 |
| Asn Thr Val Ser Ser Gly Pro Trp Glu Pro Pro Ala Arg Pro Gly | | | | | |
| | 485 | | 490 | | 495 |
| Thr Leu Phe Ser Pro Glu Asn His Asp Gln Ala Arg Glu Arg Lys | | | | | |
| | 500 | | 505 | | 510 |
| Pro Ala Lys Gln Lys Val Pro Leu Leu Ser Cys Pro Ser Gln Pro | | | | | |
| | 515 | | 520 | | 525 |
| Phe Thr Ser Lys Leu Ala Leu Leu Gly Gln Val Phe Leu Asp Ser | | | | | |
| | 530 | | 535 | | 540 |

Ser

<210> 182
 <211> 2056
 <212> DNA
 <213> Homo sapiens

<400> 182
 aaagttacat tttctctgga actctcctag gccactccct gctgatgcaa 50
 catctggggtt tgggcagaaa ggagggtgct tcggagcccg ccctttctga 100
 gcttctctggg ccggctctag aacaattcag gcttcgctgc gactcagacc 150
 tcagctccaa catatgcatt ctgaagaaag atggctgaga tggacagaat 200
 gctttatattt ggaaagaaac aatgttctag gtcaaactga gtctacaaa 250
 tgcagacttt cacaatgggt ctagaagaaa tctggacaag tcttttcatg 300
 tggtttttct acgcattgat tccatgtttg ctcacagatg aagtggccat 350
 tctgcttgcc cctcagaacc tctctgtact ctcaaccaac atgaagcatc 400
 tcttgatgtg gagcccagtg atcgcgctg gagaaacagt gtactattct 450
 gtcgaatacc agggggagta cgagagcctg tacacgagcc acatctggat 500
 cccagcagc tgggtgctcac tactgaagg tcctgagtgt gatgtcactg 550
 atgacatcac ggccactgtg ccatacaacc ttcgtgtcag ggccacattg 600
 ggctcacaga cctcagcctg gagcatcctg aagcatccct ttaatagaaa 650

ctcaaccatc cttacccgac ctgggatgga gatcaccaaa gatggcttcc 700
 acctggttat tgagctggag gacctggggc cccagtttga gttccttgtg 750
 gcctactgga ggagggagcc tggcgccgag gaacatgtca aaatggtgag 800
 gagtgggggt attccagtgc acctagaaac catggagcca ggggctgcat 850
 actgtgtgaa ggcccagaca ttcgtgaagg ccattgggag gtacagcgcc 900
 ttcagccaga cagaatgtgt ggaggtgcaa ggagaggcca tccccctggt 950
 actggccctg tttgcctttg ttggcttcat gctgatcctt gtggtcgtgc 1000
 cactgttcgt ctggaaaatg ggccggctgc tccagtactc ctggtgcccc 1050
 gtggtgggtcc tcccagacac cttgaaaata accaattcac cccagaagtt 1100
 aatcagctgc agaagggagg aggtggatgc ctgtgccacg gctgtgatgt 1150
 ctctgagga actcctcagg gcctggatct cataggtttg cggaagggcc 1200
 caggtgaagc cgagaacctg gtctgcatga catggaaacc atgaggggac 1250
 aagttgtgtt tctgttttcc gccacggaca agggatgaga gaagtaggaa 1300
 gagcctgttg tctacaagtc tagaagcaac catcagaggc aggggtggtt 1350
 gtctaacaga aactgactg aggccttaggg gatgtgacct ctagactggg 1400
 ggctgccact tgctggctga gcaacctgg gaaaagtgac ttcatccctt 1450
 cggctcctaag ttttctcatc tgtaatgggg gaattaccta cacacctgct 1500
 aaacacacac acacagagtc tctctctata tatacacacg tacacataaa 1550
 tacaccagc acttgcaagg ctagaggga actggtgaca ctctacagtc 1600
 tgactgattc agtgtttctg gagagcagga cataaatgta tgatgagaat 1650
 gatcaaggac tctacacact ggggtggcttg gagagcccac tttcccagaa 1700
 taatccttga gagaaaagga atcatgggag caatgggtgtt gagttcactt 1750
 caagcccaat gccggtgcag aggggaatgg cttagcgagc tctacagtag 1800
 gtgacctgga ggaaggtcac agccacactg aaaatgggat gtgcatgaac 1850
 acggaggatc catgaactac tgtaaagtgt tgacagtgtg tgcacactgc 1900
 agacagcagg tgaaatgtat gtgtgcaatg cgacgagaat gcagaagtca 1950
 gtaacatgtg catgtttgtt gtgctccttt tttctgttgg taaagtacag 2000
 aattcagcaa ataaaaaggg ccaccctggc caaaagcgggt aaaaaaaaaa 2050

aaaaaa 2056

<210> 183
<211> 311
<212> PRT
<213> Homo sapiens

<220>
<221> Signal peptide
<222> 1-29
<223> Signal peptide

<220>
<221> N-glycosylation sites
<222> 40-43, 134-137
<223> N-glycosylation sites.

<220>
<221> Tissue factor proteins homology
<222> 92-119
<223> Tissue factor proteins homology

<220>
<221> Transmembrane domain
<222> 230-255
<223> Transmembrane domain

<220>
<221> Integrins alpha chain protein homology
<222> 232-262
<223> Integrins alpha chain protein homology

<400> 183
Met Gln Thr Phe Thr Met Val Leu Glu Glu Ile Trp Thr Ser Leu
1 5 10 15
Phe Met Trp Phe Phe Tyr Ala Leu Ile Pro Cys Leu Leu Thr Asp
20 25 30
Glu Val Ala Ile Leu Pro Ala Pro Gln Asn Leu Ser Val Leu Ser
35 40 45
Thr Asn Met Lys His Leu Leu Met Trp Ser Pro Val Ile Ala Pro
50 55 60
Gly Glu Thr Val Tyr Tyr Ser Val Glu Tyr Gln Gly Glu Tyr Glu
65 70 75
Ser Leu Tyr Thr Ser His Ile Trp Ile Pro Ser Ser Trp Cys Ser
80 85 90
Leu Thr Glu Gly Pro Glu Cys Asp Val Thr Asp Asp Ile Thr Ala
95 100 105
Thr Val Pro Tyr Asn Leu Arg Val Arg Ala Thr Leu Gly Ser Gln
110 115 120

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Thr | Ser | Ala | Trp | Ser | Ile | Leu | Lys | His | Pro | Phe | Asn | Arg | Asn | Ser | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Thr | Ile | Leu | Thr | Arg | Pro | Gly | Met | Glu | Ile | Thr | Lys | Asp | Gly | Phe | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| His | Leu | Val | Ile | Glu | Leu | Glu | Asp | Leu | Gly | Pro | Gln | Phe | Glu | Phe | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Leu | Val | Ala | Tyr | Trp | Arg | Arg | Glu | Pro | Gly | Ala | Glu | Glu | His | Val | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Lys | Met | Val | Arg | Ser | Gly | Gly | Ile | Pro | Val | His | Leu | Glu | Thr | Met | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Glu | Pro | Gly | Ala | Ala | Tyr | Cys | Val | Lys | Ala | Gln | Thr | Phe | Val | Lys | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Ala | Ile | Gly | Arg | Tyr | Ser | Ala | Phe | Ser | Gln | Thr | Glu | Cys | Val | Glu | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Val | Gln | Gly | Glu | Ala | Ile | Pro | Leu | Val | Leu | Ala | Leu | Phe | Ala | Phe | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Val | Gly | Phe | Met | Leu | Ile | Leu | Val | Val | Val | Pro | Leu | Phe | Val | Trp | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Lys | Met | Gly | Arg | Leu | Leu | Gln | Tyr | Ser | Cys | Cys | Pro | Val | Val | Val | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Leu | Pro | Asp | Thr | Leu | Lys | Ile | Thr | Asn | Ser | Pro | Gln | Lys | Leu | Ile | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Ser | Cys | Arg | Arg | Glu | Glu | Val | Asp | Ala | Cys | Ala | Thr | Ala | Val | Met | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Ser | Pro | Glu | Glu | Leu | Leu | Arg | Ala | Trp | Ile | Ser | | | | | |
| | | | | 305 | | | | | 310 | | | | | | |

<210> 184

<211> 808

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 654, 711, 748

<223> unknown base

<400> 184

tcctgctgat gcacatctgg gtttggcaaa aggaggttgc ttcgagccgc 50

cctttctagc ttcctggccg gctctagaac aattcaggct tcgctgcgac 100

tagacctcag ctccaacata tgcattctga agaaagatgg ctgagatgac 150

agaatgcttt attttggaaa gaaacaatgt tctaggtcaa actgagtcta 200

ccaaatgcag actttcacaa tggttctaga agaaatctgg acaagtcttt 250
tcatgtgggtt tttctacgca ttgattccat gtttgctcac agatgaagtg 300
gccattctgc ctgcccctca gaacctctct gtactctcaa ccaacatgaa 350
gcatctcttg atgtggagcc cagtgatcgc gcctggagaa acagtgtact 400
attctgtcga ataccagggg gagtacgaga gcctgtacac gagccacatc 450
tggatcccca gcagctgggtg ctcaactcact gaaggtcctg agtgtgatgt 500
cactgatgac atcacggcca ctgtgccata caacctttgt gtcagggcca 550
cattgggctc acagacctca gcctggagca tcctgaagca tccctttaat 600
agaaactcaa ccataccttac ccgacctggg atggagatca ccaaagatgg 650
cttncacctg gttattgagc tggaggacct ggggccccag tttgagttcc 700
ttgtggccta ntggaggagg ggcgaacccc ttgcggcgca aggggttngc 750
gaaccccttg cggccgctgg ggtatctctc gagaaaagag aggccaata 800
tgacccac 808

<210> 185

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 185

aggcttcgct gcgactagac ctc 23

<210> 186

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 186

ccaggtcggg taaggatggt tgag 24

<210> 187

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 187

tttctacgca ttgattccat gtttgctcac agatgaagt gccattctgc 50

<210> 188

<211> 1227

<212> DNA

<213> Homo sapiens

<400> 188

cggacgcgtg ggccgccacc tccggaacaa gccatggtgg cggcgacggt 50

ggcagcggcg tggctgctcc tgtgggctgc ggcctgcgcg cagcaggagc 100

aggacttcta cgacttcaag gcggtcaaca tccggggcaa actggtgtcg 150

ctggagaagt accgcggatc ggtgtccctg gtggtgaatg tggccagcga 200

gtgcggcttc acagaccagc actaccgagc cctgcagcag ctgcagcgag 250

acctggggccc ccaccacttt aacgtgctcg ccttcccctg caaccagttt 300

ggccaacagg agcctgacag caacaaggag attgagagct ttgcccgcg 350

cacctacagt gtctcattcc ccatgttttag caagattgca gtcaccggta 400

ctggtgccca tcctgccttc aagtacctgg cccagacttc tgggaaggag 450

cccacctgga acttctggaa gtacctagta gcccagatg gaaagggtgt 500

aggggcttgg gacccaactg tgtcagtgga ggaggtcaga ccccagatca 550

cagcgctcgt gaggaagctc atcctactga agcgagaaga cttataacca 600

ccgcgtctcc tcctccacca cctcatcccg cccacctgtg tggggctgac 650

caatgcaaac tcaaatggtg cttcaaaggg agagaccac tgactctcct 700

tcctttactc ttatgccatt ggtcccatca ttcttgtggg ggaaaaattc 750

tagtatTTTTg attatttgaa tcttacagca acaaatagga actcctggcc 800

aatgagagct cttgaccagt gaatcaccag ccgatacgaa cgtcttgcca 850

acaaaaatgt gtggcaaata gaagtatatc aagcaataat ctcccaccca 900

aggcttctgt aaactgggac caatgattac ctcatagggc tgttgtgagg 950

attagatga aatacctgtg aaagtgccta ggcagtgccg gccaaatagg 1000

aggcattcaa tgaacatttt ttgcatataa accaaaaaat aacttgttat 1050

caataaaaac ttgcatccaa catgaatttc cagccgatga taatccaggc 1100

caaaggttta gttgttggtt tttcctctgt attattttct tcattacaaa 1150

agaaatgcaa gttcattgta acaatccaaa caatacctca cgatataaaa 1200

taaaaatgaa agtatcctcc tcaaaaa 1227

<210> 189

<211> 187

<212> PRT

<213> Homo sapiens

<400> 189

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Val | Ala | Ala | Thr | Val | Ala | Ala | Ala | Trp | Leu | Leu | Leu | Trp | Ala | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Ala | Ala | Cys | Ala | Gln | Gln | Glu | Gln | Asp | Phe | Tyr | Asp | Phe | Lys | Ala | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Val | Asn | Ile | Arg | Gly | Lys | Leu | Val | Ser | Leu | Glu | Lys | Tyr | Arg | Gly | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Ser | Val | Ser | Leu | Val | Val | Asn | Val | Ala | Ser | Glu | Cys | Gly | Phe | Thr | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Asp | Gln | His | Tyr | Arg | Ala | Leu | Gln | Gln | Leu | Gln | Arg | Asp | Leu | Gly | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Pro | His | His | Phe | Asn | Val | Leu | Ala | Phe | Pro | Cys | Asn | Gln | Phe | Gly | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Gln | Gln | Glu | Pro | Asp | Ser | Asn | Lys | Glu | Ile | Glu | Ser | Phe | Ala | Arg | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Arg | Thr | Tyr | Ser | Val | Ser | Phe | Pro | Met | Phe | Ser | Lys | Ile | Ala | Val | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Thr | Gly | Thr | Gly | Ala | His | Pro | Ala | Phe | Lys | Tyr | Leu | Ala | Gln | Thr | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Ser | Gly | Lys | Glu | Pro | Thr | Trp | Asn | Phe | Trp | Lys | Tyr | Leu | Val | Ala | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Pro | Asp | Gly | Lys | Val | Val | Gly | Ala | Trp | Asp | Pro | Thr | Val | Ser | Val | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Glu | Glu | Val | Arg | Pro | Gln | Ile | Thr | Ala | Leu | Val | Arg | Lys | Leu | Ile | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Leu | Leu | Lys | Arg | Glu | Asp | Leu | | | | | | | | | |
| | | | | 185 | | | | | | | | | | | |

<210> 190

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 190

gcaggacttc tacgacttca aggc 24

<210> 191
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 191
agtctgggcc aggtacttga aggc 24

<210> 192
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 192
caacatccgg ggcaactgg tgtcgctgga gaagtaccgc ggatcggtgt 50

<210> 193
<211> 2187
<212> DNA
<213> Homo sapiens

<400> 193
cggacgcgtg ggcgggccgg gacgcagggc aaagcgagcc atggctgtct 50

acgtcgggat gctgcgcctg gggaggctgt gcgccgggag ctcgggggtg 100
ctggggggccc gggccgccct ctctcggagt tggcaggaag ccaggttgca 150
gggtgtccgc ttcctcagtt ccagagaggt ggatcgcatt gtctccacgc 200
ccatcggagg cctcagctac gttcaggggt gcacaaaaaa gcatcttaac 250
agcaagactg tgggccagtg cctggagacc acagcacaga ggggtcccaga 300
acgagaggcc ttggtcgtcc tccatgaaga cgtcagggtg acctttgccc 350
aactcaagga ggaggtggac aaagctgctt ctggcctcct gagcattggc 400
ctctgcaaag gtgaccggct gggcatgtgg ggacctaaact cctatgcatg 450
ggtgtcatg cagttggcca ccgccaggc gggcatcatt ctggtgtctg 500
tgaaccacgc ctaccaggct atggaactgg agtatgtcct caagaagggtg 550
ggctgcaagg cccttggtgtt cccaagcaa ttcaagacct agcaatacta 600
caacgtcctg aagcagatct gtccagaagt ggagaatgcc cagccagggg 650
ccttgaagag tcagaggctc ccagatctga ccacagtcatt ctcggtggat 700

gccccctttgc cggggaccct gctcctggat gaagtgggtg cggtctggcag 750
cacacggcag catctggacc agctccaata caaccagcag ttcctgtcct 800
gccatgaccc catcaacatc cagttcacct cggggacaac aggcagcccc 850
aagggggcca ccctctccca ctacaacatt gtcaacaact ccaacatttt 900
aggagagcgc ctgaaactgc atgagaagac accagagcag ttgcggatga 950
tcctgccc aa cccctgtac cattgcctgg gtcccggtgg aggcacaatg 1000
atgtgtctga tgtacgggtc caccctcatc ctggcctctc ccatcttcaa 1050
tggcaagaag gcactggagg ccatcagcag agagagaggc accttcctgt 1100
atggtacccc cacgatgttc gtggacattc tgaaccagcc agacttctcc 1150
agttatgaca tctcgaccat gtgtggagggt gtcattgctg ggtcccctgc 1200
acctccagag ttgatccgag ccatcatcaa caagataaat atgaaggacc 1250
tggtggttgc ttatggaacc acagagaaca gtcccgtgac attcgcgcac 1300
ttccctgagg aactgtgga gcagaaggca gaaagcgtgg gcagaattat 1350
gcctcacacg gaggcccgga tcatgaacat ggaggcaggg acgctggcaa 1400
agctgaacac gcccggggag ctgtgcatcc gaggggtactg cgtcatgctg 1450
ggctactggg gtgagcctca gaagacagag gaagcagtgg atcaggacaa 1500
gtgggtattgg acaggagatg tcgccacaat gaatgagcag ggcttctgca 1550
agatcgtggg ccgctctaag gatatgatca tccgggggtgg tgagaacatc 1600
taccocgcag agctcgagga cttctttcac acacacccga aggtgcagga 1650
agtgcagggtg gtgggagtga aggacgatcg gatgggggaa gagatttgtg 1700
cctgcattcg gctgaaggac ggggaggaga ccacggtgga ggagataaaa 1750
gctttctgca aagggaagat ctctcacttc aagattccga agtacatcgt 1800
gtttgtcaca aactaccccc tcaccatttc aggaaagatc cagaaattca 1850
aacttcgaga gcagatggaa cgacatctaa atctgtgaat aaagcagcag 1900
gcctgtcctg gccgggttggc ttgactctct cctgtcagaa tgcaacctgg 1950
ctttatgcac ctagatgtcc ccagcaccca gttctgagcc aggcacatca 2000
aatgtcaagg aattgactga acgaactaag agctcctgga tgggtccggg 2050
aactcgctg ggcacaagggt gccaaaaggc aggcagcctg cccaggccct 2100
ccctcctgtc catccccac attcccctgt ctgtccttgt gatttggcat 2150

aaagagcttc tgttttcttt gaaaaaaaaa aaaaaaa 2187

<210> 194

<211> 615

<212> PRT

<213> Homo sapiens

<400> 194

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Val | Tyr | Val | Gly | Met | Leu | Arg | Leu | Gly | Arg | Leu | Cys | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ser | Ser | Gly | Val | Leu | Gly | Ala | Arg | Ala | Ala | Leu | Ser | Arg | Ser |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Gln | Glu | Ala | Arg | Leu | Gln | Gly | Val | Arg | Phe | Leu | Ser | Ser | Arg |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Val | Asp | Arg | Met | Val | Ser | Thr | Pro | Ile | Gly | Gly | Leu | Ser | Tyr |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Gln | Gly | Cys | Thr | Lys | Lys | His | Leu | Asn | Ser | Lys | Thr | Val | Gly |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Cys | Leu | Glu | Thr | Thr | Ala | Gln | Arg | Val | Pro | Glu | Arg | Glu | Ala |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Val | Val | Leu | His | Glu | Asp | Val | Arg | Leu | Thr | Phe | Ala | Gln | Leu |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Glu | Glu | Val | Asp | Lys | Ala | Ala | Ser | Gly | Leu | Leu | Ser | Ile | Gly |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Cys | Lys | Gly | Asp | Arg | Leu | Gly | Met | Trp | Gly | Pro | Asn | Ser | Tyr |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Trp | Val | Leu | Met | Gln | Leu | Ala | Thr | Ala | Gln | Ala | Gly | Ile | Ile |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Val | Ser | Val | Asn | Pro | Ala | Tyr | Gln | Ala | Met | Glu | Leu | Glu | Tyr |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Leu | Lys | Lys | Val | Gly | Cys | Lys | Ala | Leu | Val | Phe | Pro | Lys | Gln |
| | | | | 170 | | | | | 175 | | | | | 180 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Lys | Thr | Gln | Gln | Tyr | Tyr | Asn | Val | Leu | Lys | Gln | Ile | Cys | Pro |
| | | | | 185 | | | | | 190 | | | | | 195 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Val | Glu | Asn | Ala | Gln | Pro | Gly | Ala | Leu | Lys | Ser | Gln | Arg | Leu |
| | | | | 200 | | | | | 205 | | | | | 210 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Asp | Leu | Thr | Thr | Val | Ile | Ser | Val | Asp | Ala | Pro | Leu | Pro | Gly |
| | | | | 215 | | | | | 220 | | | | | 225 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Leu | Leu | Leu | Asp | Glu | Val | Val | Ala | Ala | Gly | Ser | Thr | Arg | Gln |
| | | | | 230 | | | | | 235 | | | | | 240 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| His | Leu | Asp | Gln | Leu | Gln | Tyr | Asn | Gln | Gln | Phe | Leu | Ser | Cys | His | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Asp | Pro | Ile | Asn | Ile | Gln | Phe | Thr | Ser | Gly | Thr | Thr | Gly | Ser | Pro | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Lys | Gly | Ala | Thr | Leu | Ser | His | Tyr | Asn | Ile | Val | Asn | Asn | Ser | Asn | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Ile | Leu | Gly | Glu | Arg | Leu | Lys | Leu | His | Glu | Lys | Thr | Pro | Glu | Gln | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Leu | Arg | Met | Ile | Leu | Pro | Asn | Pro | Leu | Tyr | His | Cys | Leu | Gly | Ser | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Val | Ala | Gly | Thr | Met | Met | Cys | Leu | Met | Tyr | Gly | Ala | Thr | Leu | Ile | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Leu | Ala | Ser | Pro | Ile | Phe | Asn | Gly | Lys | Lys | Ala | Leu | Glu | Ala | Ile | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Ser | Arg | Glu | Arg | Gly | Thr | Phe | Leu | Tyr | Gly | Thr | Pro | Thr | Met | Phe | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Val | Asp | Ile | Leu | Asn | Gln | Pro | Asp | Phe | Ser | Ser | Tyr | Asp | Ile | Ser | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Thr | Met | Cys | Gly | Gly | Val | Ile | Ala | Gly | Ser | Pro | Ala | Pro | Pro | Glu | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Leu | Ile | Arg | Ala | Ile | Ile | Asn | Lys | Ile | Asn | Met | Lys | Asp | Leu | Val | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Val | Ala | Tyr | Gly | Thr | Thr | Glu | Asn | Ser | Pro | Val | Thr | Phe | Ala | His | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Phe | Pro | Glu | Asp | Thr | Val | Glu | Gln | Lys | Ala | Glu | Ser | Val | Gly | Arg | |
| | | | | 425 | | | | | 430 | | | | | 435 | |
| Ile | Met | Pro | His | Thr | Glu | Ala | Arg | Ile | Met | Asn | Met | Glu | Ala | Gly | |
| | | | | 440 | | | | | 445 | | | | | 450 | |
| Thr | Leu | Ala | Lys | Leu | Asn | Thr | Pro | Gly | Glu | Leu | Cys | Ile | Arg | Gly | |
| | | | | 455 | | | | | 460 | | | | | 465 | |
| Tyr | Cys | Val | Met | Leu | Gly | Tyr | Trp | Gly | Glu | Pro | Gln | Lys | Thr | Glu | |
| | | | | 470 | | | | | 475 | | | | | 480 | |
| Glu | Ala | Val | Asp | Gln | Asp | Lys | Trp | Tyr | Trp | Thr | Gly | Asp | Val | Ala | |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Thr | Met | Asn | Glu | Gln | Gly | Phe | Cys | Lys | Ile | Val | Gly | Arg | Ser | Lys | |
| | | | | 500 | | | | | 505 | | | | | 510 | |
| Asp | Met | Ile | Ile | Arg | Gly | Gly | Glu | Asn | Ile | Tyr | Pro | Ala | Glu | Leu | |
| | | | | 515 | | | | | 520 | | | | | 525 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Glu | Asp | Phe | Phe | His | Thr | His | Pro | Lys | Val | Gln | Glu | Val | Gln | Val | |
| | | | | 530 | | | | | 535 | | | | | 540 | |
| Val | Gly | Val | Lys | Asp | Asp | Arg | Met | Gly | Glu | Glu | Ile | Cys | Ala | Cys | |
| | | | | 545 | | | | | 550 | | | | | 555 | |
| Ile | Arg | Leu | Lys | Asp | Gly | Glu | Glu | Thr | Thr | Val | Glu | Glu | Ile | Lys | |
| | | | | 560 | | | | | 565 | | | | | 570 | |
| Ala | Phe | Cys | Lys | Gly | Lys | Ile | Ser | His | Phe | Lys | Ile | Pro | Lys | Tyr | |
| | | | | 575 | | | | | 580 | | | | | 585 | |
| Ile | Val | Phe | Val | Thr | Asn | Tyr | Pro | Leu | Thr | Ile | Ser | Gly | Lys | Ile | |
| | | | | 590 | | | | | 595 | | | | | 600 | |
| Gln | Lys | Phe | Lys | Leu | Arg | Glu | Gln | Met | Glu | Arg | His | Leu | Asn | Leu | |
| | | | | 605 | | | | | 610 | | | | | 615 | |

<210> 195
 <211> 642
 <212> DNA
 <213> Homo sapiens

<400> 195
 caactccaac attttaggag agcgctgaa actgcatgag aagacaccag 50
 agcagttgcg gatgatcctg cccaaccccc tgtaccattg cctgggttcc 100
 gtggcaggca caatgatgtg tctgatgtac ggtgccaccc tcctcctggc 150
 ctctcccatc ttcaatggca agaaggcact ggaggccatc agcagagaga 200
 gaggcacctt cctgtatggt acccccacga tggtcgtgga cattctgaac 250
 cagccagact tctccagtta tgacatctcg accatgtgtg gaggtgtcat 300
 tgctgggtcc cctgcacctc cagagttgat ccgagccatc atcaacaaga 350
 taaatatgaa ggacctggtg gttgcttatg gaaccacaga gaacagtccc 400
 gtgacattcg cgcacttccc tgaggacact gtggagcaga aggcagaaag 450
 cgtgggcaga attatgcctc acacggaggc gcggatcatg aacatggagg 500
 cagggacgct ggcaaagctg aacacgcccg gggagctgtg catccgaggg 550
 tactgctca tgctgggcta ctggggtgag cctcagaaga cagaggaagc 600
 agtggatcag gacaagtggg attggacagg agatgtcgcc ac 642

<210> 196
 <211> 1575
 <212> DNA
 <213> Homo sapiens

<400> 196
 gagcaggacg gagccatgga ccccgccagg aaagcagggtg cccaggccat 50

gatctggact gcaggctggc tgctgctgct gctgcttcgc ggaggagcgc 100
aggccctgga gtgctacagc tgcgtgcaga aagcagatga cggatgctcc 150
ccgaacaaga tgaagacagt gaagtgcgcg ccgggcgtgg acgtctgcac 200
cgaggccgtg ggggcggtgg agaccatcca cggacaattc tcgctggcag 250
tgccggggtg cggttcggga ctccccggca agaataccg cggcctggat 300
cttcacgggc ttctggcggt catccagctg cagcaatgcg ctcaggatcg 350
ctgcaacgcc aagctcaacc tcacctcgcg ggcgctcgac ccggcaggta 400
atgagagtgc ataccgccc aacggcgtgg agtgctacag ctgtgtgggc 450
ctgagccggg aggcgtgcc a ggtacatcg ccgccggtcg tgagctgcta 500
caacgccagc gatcatgtct acaagggtg cttcgacggc aacgtcacct 550
tgacggcagc taatgtgact gtgtccttgc ctgtccgggg ctgtgtccag 600
gatgaattct gcaactggga tggagtaaca ggcccagggt tcacgctcag 650
tggtcctgt tgccaggggt cccgctgtaa ctctgacctc cgcaacaaga 700
cctacttctc ccctcgaatc ccaccccttg tccggctgcc ccctccagag 750
cccacgactg tggcctcaac cacatctgtc accacttcta cctcggcccc 800
agtgagacct acatccacca ccaaaccat gccagcgcca accagtcaga 850
ctccgagaca gggagtagaa cacgaggcct cccgggatga ggagcccagg 900
ttgactggag gcgccgctgg ccaccaggac cgcagcaatt cagggcagta 950
tcctgcaaaa ggggggcccc agcagcccca taataaaggc tgtgtggctc 1000
ccacagctgg attggcagcc cttctgttgg ccgtggctgc tgggtgccta 1050
ctgtgagctt ctccacctgg aaatttcct ctcacctact tctctggccc 1100
tggttacctt tcttctcatc acttcctgtt cccaccactg gactgggctg 1150
gcccagcccc tgtttttcca acattcccca gtatccccag cttctgctgc 1200
gctggtttgc ggctttggga aataaaatac cgttgtatat attctgccag 1250
gggtgttcta gctttttgag gacagctcct gtatccttct catccttgtc 1300
tctccgcttg tcctcttgtg atgttaggac agagtgagag aagtcagctg 1350
tcacggggaa ggtgagagag aggatgctaa gcttcctact cactttctcc 1400
tagccagcct ggactttgga gcgtgggggtg ggtgggacaa tggctcccca 1450

ctctaagcac tgcctcccct actccccgca tctttgggga atcggttccc 1500
 catatgtctt ccttactaga ctgtgagctc ctcgaggggg ggcccgtac 1550
 ccaattcgcc ctatagtgag tcgta 1575

<210> 197
 <211> 346
 <212> PRT
 <213> Homo sapiens

<400> 197
 Met Asp Pro Ala Arg Lys Ala Gly Ala Gln Ala Met Ile Trp Thr
 1 5 10 15
 Ala Gly Trp Leu Leu Leu Leu Leu Arg Gly Gly Ala Gln Ala
 20 25 30
 Leu Glu Cys Tyr Ser Cys Val Gln Lys Ala Asp Asp Gly Cys Ser
 35 40 45
 Pro Asn Lys Met Lys Thr Val Lys Cys Ala Pro Gly Val Asp Val
 50 55 60
 Cys Thr Glu Ala Val Gly Ala Val Glu Thr Ile His Gly Gln Phe
 65 70 75
 Ser Leu Ala Val Arg Gly Cys Gly Ser Gly Leu Pro Gly Lys Asn
 80 85 90
 Asp Arg Gly Leu Asp Leu His Gly Leu Leu Ala Phe Ile Gln Leu
 95 100 105
 Gln Gln Cys Ala Gln Asp Arg Cys Asn Ala Lys Leu Asn Leu Thr
 110 115 120
 Ser Arg Ala Leu Asp Pro Ala Gly Asn Glu Ser Ala Tyr Pro Pro
 125 130 135
 Asn Gly Val Glu Cys Tyr Ser Cys Val Gly Leu Ser Arg Glu Ala
 140 145 150
 Cys Gln Gly Thr Ser Pro Pro Val Val Ser Cys Tyr Asn Ala Ser
 155 160 165
 Asp His Val Tyr Lys Gly Cys Phe Asp Gly Asn Val Thr Leu Thr
 170 175 180
 Ala Ala Asn Val Thr Val Ser Leu Pro Val Arg Gly Cys Val Gln
 185 190 195
 Asp Glu Phe Cys Thr Arg Asp Gly Val Thr Gly Pro Gly Phe Thr
 200 205 210
 Leu Ser Gly Ser Cys Cys Gln Gly Ser Arg Cys Asn Ser Asp Leu
 215 220 225

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Asn | Lys | Thr | Tyr | Phe | Ser | Pro | Arg | Ile | Pro | Pro | Leu | Val | Arg |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Leu | Pro | Pro | Pro | Glu | Pro | Thr | Thr | Val | Ala | Ser | Thr | Thr | Ser | Val |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Thr | Thr | Ser | Thr | Ser | Ala | Pro | Val | Arg | Pro | Thr | Ser | Thr | Thr | Lys |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Pro | Met | Pro | Ala | Pro | Thr | Ser | Gln | Thr | Pro | Arg | Gln | Gly | Val | Glu |
| | | | | 275 | | | | | 280 | | | | | 285 |
| His | Glu | Ala | Ser | Arg | Asp | Glu | Glu | Pro | Arg | Leu | Thr | Gly | Gly | Ala |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Ala | Gly | His | Gln | Asp | Arg | Ser | Asn | Ser | Gly | Gln | Tyr | Pro | Ala | Lys |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Gly | Gly | Pro | Gln | Gln | Pro | His | Asn | Lys | Gly | Cys | Val | Ala | Pro | Thr |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Ala | Gly | Leu | Ala | Ala | Leu | Leu | Leu | Ala | Val | Ala | Ala | Gly | Val | Leu |
| | | | | 335 | | | | | 340 | | | | | 345 |

Leu

<210> 198

<211> 1657

<212> DNA

<213> Homo sapiens

<400> 198

```

cgggactcgg cgggtcctcc tgggagtctc ggaggggacc ggctgtgcag 50
acgccatgga gttggtgctg gtcttctctc gcagcctgct ggcccccatg 100
gtcctggcca gtgcagctga aaaggagaag gaaatggacc cttttcatta 150
tgattaccag accctgagga ttgggggact ggtgttcgct gtggtcctct 200
tctcggttgg gatcctcctt atcctaagtc gcaggtgcaa gtgcagtttc 250
aatcagaagc cccgggcccc aggagatgag gaagcccagg tggagaacct 300
catcaccgcc aatgcaacag agccccagaa gcagagaact gaagtgcagc 350
catcaggtgg aagcctctgg aacctgaggc ggctgcttga acctttggat 400
gcaaagtctg atgcttaaga aaaccggcca cttcagcaac agccctttcc 450
ccaggagaag ccaagaactt gtgtgtcccc caccctatcc cctctaacac 500
cattcctcca cctgatgatg caactaacac ttgcctcccc actgcagcct 550
gcggtcctgc ccacctcccg tgatgtgtgt gtgtgtgtgt gtgtgtgact 600

```

gtgtgtgttt gctaactgtg gtctttgtgg ctacttgttt gtggatggta 650
 ttgtgtttgt tagtgaactg tggactcgct ttcccaggca ggggctgagc 700
 cacatggcca tctgctcctc cctgcccccg tggccctcca tcacettctg 750
 ctctaggag gctgcttggt gcccgagacc agccccctcc cctgatttag 800
 ggatgcgtag ggtaagagca cgggcagtgg tcttcagtcg tcttgggacc 850
 tgggaagggt tgcagcactt tgtcatcatt cttcatggac tcctttcact 900
 cctttaacaa aaaccttgct tccttatccc acctgatccc agtctgaagg 950
 tctcttagca actggagata caaagcaagg agctggtgag cccagcggtg 1000
 acgtcaggca ggctatgccc ttccgtgggt aatttcttcc caggggcttc 1050
 cacgaggagt ccccatctgc cccgccccct cacagagcgc ccggggattc 1100
 caggcccagg gcttctactc tgcccctggg gaatgtgtcc cctgcatatc 1150
 ttctcagcaa taactccatg ggctctggga ccctaccct tccaaccttc 1200
 cctgcttctg agacttcaat ctacagccca gctcatccag atgcagacta 1250
 cagtcctctg aattgggtct ctggcaggca atagttgaag gactcctgtt 1300
 ccgttggggc cagcacaccg ggatggatgg agggagagca gaggcctttg 1350
 cttctctgcc tacgtccct tagatgggca gcagaggcaa ctcccgcac 1400
 ctttgcctct cctgtcggtg gtcagagcgg tgagcgaggt gggttggaga 1450
 ctcagcaggc tccgtgcagc ccttgggaac agtgagaggt tgaaggatcat 1500
 aacgagagtg ggaactcaac ccagatcccg cccctcctgt cctctgtgtt 1550
 cccgcggaaa ccaaccaaac cgtgcgctgt gaccattgc tgttctctgt 1600
 atcgtgatct atcctcaaca acaacagaaa aaaggaataa aatatccttt 1650
 gtttcct 1657

<210> 199

<211> 120

<212> PRT

<213> Homo sapiens

<400> 199

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Leu | Val | Leu | Val | Phe | Leu | Cys | Ser | Leu | Leu | Ala | Pro | Met |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Leu | Ala | Ser | Ala | Ala | Glu | Lys | Glu | Lys | Glu | Met | Asp | Pro | Phe |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Tyr | Asp | Tyr | Gln | Thr | Leu | Arg | Ile | Gly | Gly | Leu | Val | Phe | Ala |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

| | | | | | |
|---|-----|--|-----|--|-----|
| | 35 | | 40 | | 45 |
| Val Val Leu Phe Ser Val Gly Ile Leu Leu Ile Leu Ser Arg Arg | | | | | |
| | 50 | | 55 | | 60 |
| Cys Lys Cys Ser Phe Asn Gln Lys Pro Arg Ala Pro Gly Asp Glu | | | | | |
| | 65 | | 70 | | 75 |
| Glu Ala Gln Val Glu Asn Leu Ile Thr Ala Asn Ala Thr Glu Pro | | | | | |
| | 80 | | 85 | | 90 |
| Gln Lys Gln Arg Thr Glu Val Gln Pro Ser Gly Gly Ser Leu Trp | | | | | |
| | 95 | | 100 | | 105 |
| Asn Leu Arg Arg Leu Leu Glu Pro Leu Asp Ala Asn Val Asp Ala | | | | | |
| | 110 | | 115 | | 120 |

<210> 200
 <211> 415
 <212> DNA
 <213> Homo sapiens

<400> 200
 aaacttgacg ccatgaagat cccggtcctt cctgccgtgg tgctcctctc 50
 cctcctggtg ctccactctg cccagggagc caccctgggt ggtcctgagg 100
 aagaaagcac cattgagaat tatgcgtcac gacccgaggc ctttaacacc 150
 ccgttctga acatcgacaa attgcatct gcgtttaagg ctgatgagtt 200
 cctgaactgg cacgccctct ttgagtctat caaaaggaaa cttcctttcc 250
 tcaactggga tgcctttcct aagctgaaag gactgaggag cgcaactcct 300
 gatgccagtg gaccatgacc tccactggaa gaggggggcta gcgtgagcgc 350
 tgattctcaa cctaccataa ctctttcctg cctcaggaac tccaataaaa 400
 cattttccat ccaaa 415

<210> 201
 <211> 99
 <212> PRT
 <213> Homo sapiens

<400> 201
 Met Lys Ile Pro Val Leu Pro Ala Val Val Leu Leu Ser Leu Leu
 1 5 10 15
 Val Leu His Ser Ala Gln Gly Ala Thr Leu Gly Gly Pro Glu Glu
 20 25 30
 Glu Ser Thr Ile Glu Asn Tyr Ala Ser Arg Pro Glu Ala Phe Asn
 35 40 45
 Thr Pro Phe Leu Asn Ile Asp Lys Leu Arg Ser Ala Phe Lys Ala

| | | |
|---|----|----|
| 50 | 55 | 60 |
| Asp Glu Phe Leu Asn Trp His Ala Leu Phe Glu Ser Ile Lys Arg | | |
| 65 | 70 | 75 |
| Lys Leu Pro Phe Leu Asn Trp Asp Ala Phe Pro Lys Leu Lys Gly | | |
| 80 | 85 | 90 |
| Leu Arg Ser Ala Thr Pro Asp Ala Gln | | |
| 95 | | |

<210> 202
 <211> 678
 <212> DNA
 <213> Homo sapiens

<400> 202
 cagttctgaa atcaatggag ttaatttagg gaatacaaac cagccatggg 50
 ggtggagatt gcctttgcct cagtgattct cacctgcctc tcccttctgg 100
 cagcaggagt ctcccaggtt gttcttctcc agccagttcc aactcaggag 150
 acaggtccca aggccatggg agatctctcc tgtggctttg ccggccactc 200
 atgagagtgt ttttgtgtaa agtatttttt agaatactgt tgacttcttc 250
 atgatttaat aaccatcctt tgcgaagttt tatgaggctt taggggaatg 300
 tcaaccctca aatttttggt atactagatg gcttccattt acccaccact 350
 attttaaggt ccctttattt ttaggttcaa ggttcatttg acttgagaaa 400
 gtgcccttct gcagcttcat tgattttggt tatcttcact attaattgta 450
 acgattaaaa aagaataaga gcacgcagac ctctaggaga atattttatc 500
 cctgggtgcc cctgacacat ttatgtagtg atcccacaaa tgtgattggt 550
 aatttaaatg ttatttctaat attagtacat tcagttgtga tgtaatatga 600
 ataaccagaa tctatttctt aaaagttttg agtatatttt tcaactagat 650
 atttgtatag aaagactgaa tagtgatg 678

<210> 203
 <211> 52
 <212> PRT
 <213> Homo sapiens

<400> 203
 Met Gly Val Glu Ile Ala Phe Ala Ser Val Ile Leu Thr Cys Leu
 1 5 10 15
 Ser Leu Leu Ala Ala Gly Val Ser Gln Val Val Leu Leu Gln Pro
 20 25 30

Val Pro Thr Gln Glu Thr Gly Pro Lys Ala Met Gly Asp Leu Ser
35 40 45

Cys Gly Phe Ala Gly His Ser
50

<210> 204

<211> 1917

<212> DNA

<213> Homo sapiens

<400> 204

ggggaatctg cagtaggtct gccggcgatg gagtgggtggg ctagctcgcc 50
gcttcgggctc tggctgctgt tgttcctcct gccctcagcg cagggccgcc 100
agaaggagtc aggttcaaaa tggaaagtat ttattgacca aattaacagg 150
tctttggaga attacgaacc atgttcaagt caaaactgca gctgctacca 200
tgggtgtcata gaagaggatc taactccttt ccgaggaggc atctccagga 250
agatgatggc agaggtagtc agacggaagc tagggacca ctatcagatc 300
actaagaaca gactgtaccg ggaaaatgac tgcattgttc cctcaagggtg 350
tagtgggtgtt gagcacttta ttttggaagt gatcgggctt ctccctgaca 400
tggagatggg gatcaatgta cgagattatc ctcagggttc taaatggatg 450
gagcctgcc a tccagtcctt ctctttcagt aagacatcag agtaccatga 500
tatcatgtat cctgcttggg cattttggga agggggacct gctgtttggc 550
caatttatcc tacaggctct ggacgggtggg acctcttcag agaagatctg 600
gtaagggtcag cagcacagtg gccatggaaa aagaaaaact ctacagcata 650
tttccgagga tcaaggacaa gtccagaacg agatcctctc attcttctgt 700
ctcggaaaaa cccaaaactt gttgatgcag aatacaccaa aaaccaggcc 750
tggaaatcta tgaaagatac cttaggaaag ccagctgcta aggatgtcca 800
tcttgtggat cactgcaaat acaagtatct gtttaatttt cgaggcgtag 850
ctgcaagttt ccggtttaaa cacctcttcc tgtgtggctc acttgttttc 900
catgttggtg atgagtggct agaattcttc tatccacagc tgaagccatg 950
ggttcactat atcccagtca aacagatct ctccaatgtc caagagctgt 1000
tacaatttgt aaaagcaaat gatgatgtag ctcaagagat tgctgaaagg 1050
ggaagccagt ttattaggaa ccatttgcag atggatgaca tcacctgtta 1100
ctgggagaac ctcttgagtg aatactctaa attcctgtct tataatgtaa 1150

cgagaaggaa aggttatgat caaattattc ccaaaatggt gaaaactgaa 1200
 ctatagtagt catcatagga ccatagtcct ctttgtggca acagatctca 1250
 gatatacctac ggtgagaagc ttaccataag cttggctcct ataccttgaa 1300
 tatctgctat caagccaaat acctggtttt ccttatcatg ctgcaccag 1350
 agcaactctt gagaaagatt taaaatgtgt ctaatacact gatatgaagc 1400
 agttcaactt tttggatgaa taaggaccag aaatcgtgag atgtggattt 1450
 tgaaccaaac tctacctttc attttcttaa gaccaatcac agcttgtgcc 1500
 tcagatcatc cacctgtgtg agtccatcac tgtgaaattg actgtgtcca 1550
 tgtgatgatg ccctttgtcc cattatttgg agcagaaaat tcgtcatttg 1600
 gaagtagtac aactcattgc tggaattgtg aaattattca aggcgtgatc 1650
 tctgtcactt tattttaatg taggaaaccc tatgggggtt atgaaaaata 1700
 cttgggggatc attctctgaa tgggtctaagg aagcggtagc catgccatgc 1750
 aatgatgtag gagttctctt ttgtaaaacc ataaactctg ttactcagga 1800
 ggtttctata atgccacata gaaagaggcc aattgcatga gtaattattg 1850
 caattggatt tcaggttccc ttttgtgcc ttcatgccct acttcttaat 1900
 gcctctctaa agccaaa 1917

<210> 205 ..

<211> 392

<212> PRT

<213> Homo sapiens

<400> 205

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Trp | Trp | Ala | Ser | Ser | Pro | Leu | Arg | Leu | Trp | Leu | Leu | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Phe | Leu | Leu | Pro | Ser | Ala | Gln | Gly | Arg | Gln | Lys | Glu | Ser | Gly | Ser |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Lys | Trp | Lys | Val | Phe | Ile | Asp | Gln | Ile | Asn | Arg | Ser | Leu | Glu | Asn |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Tyr | Glu | Pro | Cys | Ser | Ser | Gln | Asn | Cys | Ser | Cys | Tyr | His | Gly | Val |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ile | Glu | Glu | Asp | Leu | Thr | Pro | Phe | Arg | Gly | Gly | Ile | Ser | Arg | Lys |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Met | Met | Ala | Glu | Val | Val | Arg | Arg | Lys | Leu | Gly | Thr | His | Tyr | Gln |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | |
|---|-----|-----|-----|
| Ile Thr Lys Asn Arg Leu Tyr Arg Glu Asn Asp Cys Met Phe Pro | 95 | 100 | 105 |
| Ser Arg Cys Ser Gly Val Glu His Phe Ile Leu Glu Val Ile Gly | 110 | 115 | 120 |
| Arg Leu Pro Asp Met Glu Met Val Ile Asn Val Arg Asp Tyr Pro | 125 | 130 | 135 |
| Gln Val Pro Lys Trp Met Glu Pro Ala Ile Pro Val Phe Ser Phe | 140 | 145 | 150 |
| Ser Lys Thr Ser Glu Tyr His Asp Ile Met Tyr Pro Ala Trp Thr | 155 | 160 | 165 |
| Phe Trp Glu Gly Gly Pro Ala Val Trp Pro Ile Tyr Pro Thr Gly | 170 | 175 | 180 |
| Leu Gly Arg Trp Asp Leu Phe Arg Glu Asp Leu Val Arg Ser Ala | 185 | 190 | 195 |
| Ala Gln Trp Pro Trp Lys Lys Lys Asn Ser Thr Ala Tyr Phe Arg | 200 | 205 | 210 |
| Gly Ser Arg Thr Ser Pro Glu Arg Asp Pro Leu Ile Leu Leu Ser | 215 | 220 | 225 |
| Arg Lys Asn Pro Lys Leu Val Asp Ala Glu Tyr Thr Lys Asn Gln | 230 | 235 | 240 |
| Ala Trp Lys Ser Met Lys Asp Thr Leu Gly Lys Pro Ala Ala Lys | 245 | 250 | 255 |
| Asp Val His Leu Val Asp His Cys Lys Tyr Lys Tyr Leu Phe Asn | 260 | 265 | 270 |
| Phe Arg Gly Val Ala Ala Ser Phe Arg Phe Lys His Leu Phe Leu | 275 | 280 | 285 |
| Cys Gly Ser Leu Val Phe His Val Gly Asp Glu Trp Leu Glu Phe | 290 | 295 | 300 |
| Phe Tyr Pro Gln Leu Lys Pro Trp Val His Tyr Ile Pro Val Lys | 305 | 310 | 315 |
| Thr Asp Leu Ser Asn Val Gln Glu Leu Leu Gln Phe Val Lys Ala | 320 | 325 | 330 |
| Asn Asp Asp Val Ala Gln Glu Ile Ala Glu Arg Gly Ser Gln Phe | 335 | 340 | 345 |
| Ile Arg Asn His Leu Gln Met Asp Asp Ile Thr Cys Tyr Trp Glu | 350 | 355 | 360 |
| Asn Leu Leu Ser Glu Tyr Ser Lys Phe Leu Ser Tyr Asn Val Thr | 365 | 370 | 375 |

Arg Arg Lys Gly Tyr Asp Gln Ile Ile Pro Lys Met Leu Lys Thr
380 385 390

Glu Leu

<210> 206

<211> 1425

<212> DNA

<213> Homo sapiens

<400> 206

caccctcca tttctgccca tggccctgc actgctcctg atccctgctg 50
ccctcgctc tttcactctg gcctttggca cgggagtgga gttcgtgcgc 100
tttacctccc ttgggccact tcttgaggag atcccgagct ctggtggtcc 150
ggatgcccgc cagggatggc tggctgccct gcaggaccgc agcatccttg 200
ccccctggc atgggatctg gggctcctgc ttctatttgt tgggcagcac 250
agcctcatgg cagctgaaag agtgaaggca tggacatccc ggtactttgg 300
ggtccttcag aggtcactgt atgtggcctg cactgccctg gccttgacgc 350
tggtgatgcg gtactgggag ccataccca aaggccctgt gttgtgggag 400
gctcgggctg agccatgggc cacctgggtg ccgctcctct gctttgtgct 450
ccatgtcatc tcttggtccc tcactcttag catccttctc gtctttgact 500
atgctgagct catgggcctc aaacaggtat actaccatgt gctggggctg 550
ggcgagcctc tggccctgaa gtctccccgg gctctcagac tcttctccca 600
cctgcgccac ccagtgtgtg tggagctgct gacagtgctg tgggtggtgc 650
ctaccctggg cacggaccgt ctctccttg ctttctcctt taccctctac 700
ctgggcctgg ctacggggt tgatcagcaa gacctccgt acctccgggc 750
ccagctacaa agaaaactcc acctgctctc tcggccccag gatggggagg 800
cagagtgagg agctcactct gggtacaagc cctgttcttc ctctccact 850
gaattctaaa tccttaacat ccaggccctg gctgcttcat gccagaggcc 900
caaatccatg gactgaagga gatgccctt ctactacttg agactttatt 950
ctctgggtcc agctccatac cctaaattct gagtttcagc cactgaactc 1000
caagggtccac ttctcaccag caaggaagag tggggtatgg aagtcactctg 1050
tcccttcact gtttagagca tgacactctc cccctcaaca gcctcctgag 1100
aaggaaagga tctgcctga ccactcccct ggcactgtta cttgcctctg 1150

cgcctcaggg gtcccccttct gcaccgctgg cttccactcc aagaaggtgg 1200
 accaggggtct gcaagttcaa cgggtcatagc tgtccctcca ggccccaacc 1250
 ttgcctcacc actcccggcc ctagtctctg cacctcctta ggccctgcct 1300
 ctgggctcag accccaacct agtcaagggg attctcctgc tcttaactcg 1350
 atgacttggg gctccctgct ctcccagagga agatgctctg caggaaaata 1400
 aaagtcagcc tttttctaaa aaaaa 1425

<210> 207
 <211> 262
 <212> PRT
 <213> Homo sapiens

<400> 207
 Met Ala Pro Ala Leu Leu Leu Ile Pro Ala Ala Leu Ala Ser Phe
 1 5 10 15
 Ile Leu Ala Phe Gly Thr Gly Val Glu Phe Val Arg Phe Thr Ser
 20 25 30
 Leu Arg Pro Leu Leu Gly Gly Ile Pro Glu Ser Gly Gly Pro Asp
 35 40 45
 Ala Arg Gln Gly Trp Leu Ala Ala Leu Gln Asp Arg Ser Ile Leu
 50 55 60
 Ala Pro Leu Ala Trp Asp Leu Gly Leu Leu Leu Phe Val Gly
 65 70 75
 Gln His Ser Leu Met Ala Ala Glu Arg Val Lys Ala Trp Thr Ser
 80 85 90
 Arg Tyr Phe Gly Val Leu Gln Arg Ser Leu Tyr Val Ala Cys Thr
 95 100 105
 Ala Leu Ala Leu Gln Leu Val Met Arg Tyr Trp Glu Pro Ile Pro
 110 115 120
 Lys Gly Pro Val Leu Trp Glu Ala Arg Ala Glu Pro Trp Ala Thr
 125 130 135
 Trp Val Pro Leu Leu Cys Phe Val Leu His Val Ile Ser Trp Leu
 140 145 150
 Leu Ile Phe Ser Ile Leu Leu Val Phe Asp Tyr Ala Glu Leu Met
 155 160 165
 Gly Leu Lys Gln Val Tyr Tyr His Val Leu Gly Leu Gly Glu Pro
 170 175 180
 Leu Ala Leu Lys Ser Pro Arg Ala Leu Arg Leu Phe Ser His Leu
 185 190 195

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | His | Pro | Val | Cys | Val | Glu | Leu | Leu | Thr | Val | Leu | Trp | Val | Val |
| | | | 200 | | | | | | 205 | | | | | 210 |
| Pro | Thr | Leu | Gly | Thr | Asp | Arg | Leu | Leu | Leu | Ala | Phe | Leu | Leu | Thr |
| | | | 215 | | | | | | 220 | | | | | 225 |
| Leu | Tyr | Leu | Gly | Leu | Ala | His | Gly | Leu | Asp | Gln | Gln | Asp | Leu | Arg |
| | | | 230 | | | | | | 235 | | | | | 240 |
| Tyr | Leu | Arg | Ala | Gln | Leu | Gln | Arg | Lys | Leu | His | Leu | Leu | Ser | Arg |
| | | | 245 | | | | | | 250 | | | | | 255 |
| Pro | Gln | Asp | Gly | Glu | Ala | Glu | | | | | | | | |
| | | | 260 | | | | | | | | | | | |

<210> 208
 <211> 2095
 <212> DNA
 <213> Homo sapiens

<400> 208
 ccgagcacag gagattgcct gcgttttagga ggtggctgcg ttgtgggaaa 50
 agctatcaag gaagaaattg ccaaaccatg tctttttttc tgttttcaga 100
 gtagttcaca acagatctga gtgtttttaat taagcatgga atacagaaaa 150
 caacaaaaaa cttaagcttt aatttcatct ggaattccac agttttctta 200
 gctccctgga cccggttgac ctggttgctc tccccgctgg ctgctctatc 250
 acgtggtgct ctccgactac tcaccccgag tgtaaagaac cttcggctcg 300
 cgtgcttctg agctgctgtg gatggcctcg gctctctgga ctgtccttcc 350
 gagtaggatg tcaactgagat ccctcaaattg gagcctcctg ctgctgtcac 400
 tcttgagttt ctttgtgatg tggtagctca gccttcccca ctacaatgtg 450
 atagaacgcg tgaactggat gtacttctat gagtatgagc cgatttacag 500
 acaagacttt cacttcacac ttcgagagca ttcaaactgc tctcatcaaa 550
 atccatttct ggtcattctg gtgacctccc acccttcaga tgtgaaagcc 600
 aggcaggcca ttagagttac ttgggggtgaa aaaaagtctt ggtggggata 650
 tgaggttctt acatttttct tattaggcca agaggctgaa aaggaagaca 700
 aaatggtggc attgtcctta gaggatgaac accttcttta tggtagacata 750
 atccgacaag atttttttaga cacatataat aacctgacct tgaaaaccat 800
 tatggcattc aggtgggtaa ctgagttttg cccaatgcc aagtacgtaa 850
 tgaagacaga cactgatgtt ttcataata ctggcaattt agtgaagtat 900

cttttaaacc taaaccactc agagaagttt ttcacagggtt atcctctaata 950
 tgataattat tcctatagag gattttacca aaaaacccat atttcttacc 1000
 aggagtatcc tttcaagggtg ttccctccat actgcagtgg gttgggttat 1050
 ataatgtcca gagatttggt gccaaaggatc tatgaaatga tgggtcacgt 1100
 aaaacccatc aagtttgaag atgtttatgt cgggatctgt ttgaatttat 1150
 taaaagtga cttcatatt ccagaagaca caaatctttt ctttctatat 1200
 agaatccatt tggatgtctg tcaactgaga cgtgtgattg cagcccatgg 1250
 cttttcttcc aaggagatca tcactttttg gcaggatcatg ctaaggaaca 1300
 ccacatgcc tttattaactt cacattctac aaaaagccta gaaggacagg 1350
 ataccttggtg gaaagtgtta aataaagtag gtactgtgga aaattcatgg 1400
 ggaggtcagt gtgctggctt acactgaact gaaactcatg aaaaaccag 1450
 actggagact ggagggttac acttgtgatt tattagtcag gcccttcaa 1500
 gatgatatgt ggaggaatta aatataaagg aattggaggt ttttgctaaa 1550
 gaaattaata ggaccaaaca atttggacat gtcattctgt agactagaat 1600
 ttcttaaaag ggtgttactg agttataagc tcactaggct gtaaaaacaa 1650
 aacaatgtag agttttattt attgaacaat gtagtcactt gaagggtttg 1700
 tgtatatctt atgtggatta ccaatttaaa aatatatgta gttctgtgtc 1750
 aaaaaacttc ttactgaag ttatactgaa caaaatttta cctgtttttg 1800
 gtcatttata aagtacttca agatgttgca gtatttcaca gttattatta 1850
 tttaaaatta cttcaacttt gtgtttttta atgttttgac gatttcaata 1900
 caagataaaa aggatagtga atcattcttt acatgcaaac attttccagt 1950
 tacttaactg atcagtttat tattgataca tcactccatt aatgtaaagt 2000
 cataggatcat tattgcatat cagtaatctc ttggactttg ttaaataatt 2050
 tactgtggta atatagagaa gaattaaagc aagaaaatct gaaaa 2095

<210> 209

<211> 331

<212> PRT

<213> Homo sapiens

<400> 209

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ser | Ala | Leu | Trp | Thr | Val | Leu | Pro | Ser | Arg | Met | Ser | Leu |
| 1 | | | | 5 | | | | 10 | | | | | | 15 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ser | Leu | Lys | Trp | Ser | Leu | Leu | Leu | Leu | Ser | Leu | Leu | Ser | Phe | 20 | 25 | 30 |
| Phe | Val | Met | Trp | Tyr | Leu | Ser | Leu | Pro | His | Tyr | Asn | Val | Ile | Glu | 35 | 40 | 45 |
| Arg | Val | Asn | Trp | Met | Tyr | Phe | Tyr | Glu | Tyr | Glu | Pro | Ile | Tyr | Arg | 50 | 55 | 60 |
| Gln | Asp | Phe | His | Phe | Thr | Leu | Arg | Glu | His | Ser | Asn | Cys | Ser | His | 65 | 70 | 75 |
| Gln | Asn | Pro | Phe | Leu | Val | Ile | Leu | Val | Thr | Ser | His | Pro | Ser | Asp | 80 | 85 | 90 |
| Val | Lys | Ala | Arg | Gln | Ala | Ile | Arg | Val | Thr | Trp | Gly | Glu | Lys | Lys | 95 | 100 | 105 |
| Ser | Trp | Trp | Gly | Tyr | Glu | Val | Leu | Thr | Phe | Phe | Leu | Leu | Gly | Gln | 110 | 115 | 120 |
| Glu | Ala | Glu | Lys | Glu | Asp | Lys | Met | Leu | Ala | Leu | Ser | Leu | Glu | Asp | 125 | 130 | 135 |
| Glu | His | Leu | Leu | Tyr | Gly | Asp | Ile | Ile | Arg | Gln | Asp | Phe | Leu | Asp | 140 | 145 | 150 |
| Thr | Tyr | Asn | Asn | Leu | Thr | Leu | Lys | Thr | Ile | Met | Ala | Phe | Arg | Trp | 155 | 160 | 165 |
| Val | Thr | Glu | Phe | Cys | Pro | Asn | Ala | Lys | Tyr | Val | Met | Lys | Thr | Asp | 170 | 175 | 180 |
| Thr | Asp | Val | Phe | Ile | Asn | Thr | Gly | Asn | Leu | Val | Lys | Tyr | Leu | Leu | 185 | 190 | 195 |
| Asn | Leu | Asn | His | Ser | Glu | Lys | Phe | Phe | Thr | Gly | Tyr | Pro | Leu | Ile | 200 | 205 | 210 |
| Asp | Asn | Tyr | Ser | Tyr | Arg | Gly | Phe | Tyr | Gln | Lys | Thr | His | Ile | Ser | 215 | 220 | 225 |
| Tyr | Gln | Glu | Tyr | Pro | Phe | Lys | Val | Phe | Pro | Pro | Tyr | Cys | Ser | Gly | 230 | 235 | 240 |
| Leu | Gly | Tyr | Ile | Met | Ser | Arg | Asp | Leu | Val | Pro | Arg | Ile | Tyr | Glu | 245 | 250 | 255 |
| Met | Met | Gly | His | Val | Lys | Pro | Ile | Lys | Phe | Glu | Asp | Val | Tyr | Val | 260 | 265 | 270 |
| Gly | Ile | Cys | Leu | Asn | Leu | Leu | Lys | Val | Asn | Ile | His | Ile | Pro | Glu | 275 | 280 | 285 |
| Asp | Thr | Asn | Leu | Phe | Phe | Leu | Tyr | Arg | Ile | His | Leu | Asp | Val | Cys | 290 | 295 | 300 |

Gln Leu Arg Arg Val Ile Ala Ala His Gly Phe Ser Ser Lys Glu
305 310 315

Ile Ile Thr Phe Trp Gln Val Met Leu Arg Asn Thr Thr Cys His
320 325 330

Tyr

<210> 210

<211> 745

<212> DNA

<213> Homo sapiens

<400> 210

cctctgtcca ctgctttcgt gaagacaaga tgaagttcac aattgtcttt 50
gctggacttc ttggagtctt tctagctcct gccctagcta actataatat 100
caacgtcaat gatgacaaca acaatgctgg aagtgggcag cagtcaagtga 150
gtgtcaacaa tgaacacaat gtggccaatg ttgacaataa caacggatgg 200
gactcctgga attccatctg ggattatgga aatggctttg ctgcaaccag 250
actctttcaa aagaagacat gcattgtgca caaaatgaac aaggaagtca 300
tgccctccat tcaatccctt gatgcactgg tcaaggaaaa gaagcttcag 350
ggtaaggggac caggaggacc acctcccaag ggcctgatgt actcagtcaa 400
cccaaacaaa gtcgatgacc tgagcaagtt cggaaaaaac attgcaaaca 450
tgtgtcgtgg gattccaaca tacatggctg aggagatgca agaggcaagc 500
ctgttttttt actcaggaac gtgctacacg accagtgtac tatggattgt 550
ggacatttcc ttctgtggag acacgggtgga gaactaaaca attttttaaa 600
gccactatgg atttagtcat ctgaatatgc tgtgcagaaa aaatatgggc 650
tccagtgggt tttaccatgt cattctgaaa tttttctcta ctagttatgt 700
ttgatttctt taagtttcaa taaaatcatt tagcattgaa aaaaa 745

<210> 211

<211> 185

<212> PRT

<213> Homo sapiens

<400> 211

Met Lys Phe Thr Ile Val Phe Ala Gly Leu Leu Gly Val Phe Leu
1 5 10 15

Ala Pro Ala Leu Ala Asn Tyr Asn Ile Asn Val Asn Asp Asp Asn
20 25 30

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Asn | Ala | Gly | Ser | Gly | Gln | Gln | Ser | Val | Ser | Val | Asn | Asn | Glu | 35 | 40 | 45 |
| His | Asn | Val | Ala | Asn | Val | Asp | Asn | Asn | Asn | Gly | Trp | Asp | Ser | Trp | 50 | 55 | 60 |
| Asn | Ser | Ile | Trp | Asp | Tyr | Gly | Asn | Gly | Phe | Ala | Ala | Thr | Arg | Leu | 65 | 70 | 75 |
| Phe | Gln | Lys | Lys | Thr | Cys | Ile | Val | His | Lys | Met | Asn | Lys | Glu | Val | 80 | 85 | 90 |
| Met | Pro | Ser | Ile | Gln | Ser | Leu | Asp | Ala | Leu | Val | Lys | Glu | Lys | Lys | 95 | 100 | 105 |
| Leu | Gln | Gly | Lys | Gly | Pro | Gly | Gly | Pro | Pro | Pro | Lys | Gly | Leu | Met | 110 | 115 | 120 |
| Tyr | Ser | Val | Asn | Pro | Asn | Lys | Val | Asp | Asp | Leu | Ser | Lys | Phe | Gly | 125 | 130 | 135 |
| Lys | Asn | Ile | Ala | Asn | Met | Cys | Arg | Gly | Ile | Pro | Thr | Tyr | Met | Ala | 140 | 145 | 150 |
| Glu | Glu | Met | Gln | Glu | Ala | Ser | Leu | Phe | Phe | Tyr | Ser | Gly | Thr | Cys | 155 | 160 | 165 |
| Tyr | Thr | Thr | Ser | Val | Leu | Trp | Ile | Val | Asp | Ile | Ser | Phe | Cys | Gly | 170 | 175 | 180 |
| Asp | Thr | Val | Glu | Asn | | | | | | | | | | | 185 | | |

<210> 212

<211> 1706

<212> DNA

<213> Homo sapiens

<400> 212

```

catttctgaa actaatcgtg tcagaattga ctttgaaaag cattgctttt 50

tacagaagta tattaacttt ttaggagtaa tttctagttt ggattgtaat 100

atgaaataat ttaaaagggc ttcgctcata tataggaaaa tcgcatatgg 150

tcctagtatt aaattcttat tgcttactga tttttttgag ttaagagttg 200

ttatatgcta gaatatgagg atgtgaatat aaataagaga agaaaaaaga 250

ataaagtaga ttgagtctcc aattttatgt aagcttcaga agaactgggt 300

tgtttacatg caagcttata gttgaaatat ttttcaggaa ttacatgaat 350

gacagtcttc gaaccaatgt gtttggtcga tttcaaccag agactatagc 400

atgtgcttgc atctaccttg cagctagagc acttcagatt ccgttgccaa 450

```

```

ctcgtcccca ttggtttctt ctttttggtta ctacagaaga ggaaatccag 500
gaaatctgca tagaaacact taggctttat accagaaaaa agccaaacta 550
tgaattactg gaaaaagaag tagaaaaaag aaaagtagcc ttacaagaag 600
ccaaattaaa agcaaaggga ttgaatccgg atggaactcc agccctttca 650
accctgggtg gatTTTTctcc agcctccaag ccatcatcac caagagaagt 700
aaaagctgaa gagaaatcac caatctccat taatgtgaag acagtcaaaa 750
aagaacctga ggatagacaa caggcttcca aaagccctta caatggtgta 800
agaaaagaca gcaagagaag tagaaatagc agaagtgcaa gtcgatcgag 850
gtcaagaaca cgatcacgtt ctagatcaca tactccaaga agacactata 900
ataataggcg gagtcgatct ggaacataca gctcgagatc aagaagcagg 950
tcccgcagtc acagtgaaag cctcgaaga catcataatc atggttctcc 1000
tcaccttaag gccaagcata ccagagatga tttaaaaagt tcaaacagac 1050
atggtcataa aaggaaaaaa tctcgttctc gatctcagag caagtctcgg 1100
gatcactcag atgcagccaa gaaacacagg catgaaaggg gacatcatag 1150
ggacaggcgt gaacgatctc gtccttttga gaggtcccat aaaagcaagc 1200
accatggtgg cagtcgctca ggacatggca ggcacaggcg ctgactttct 1250
cttcctttga gcctgcatca gttcttggtt ttgcctatct acagtgtgat 1300
gtatggactc aatcaaaaac attaaacgca aactgattag gatttgattt 1350
cttgaaaccc tctaggtctc tagaacactg aggacagttt cttttgaaaa 1400
gaactatggt aatttttttg cacattaaaa tgccctagca gtatctaatt 1450
aaaaaccatg gtcagggttca attgtacttt attatagttg tgtattgttt 1500
attgctataa gaactggagc gtgaattctg taaaaatgta tcttattttt 1550
atacagataa aattgcagac actgttctat ttaagtgggt atttgtttta 1600
atgatgggtg atactttctt aacactgggt tgtctgcatg tgtaaagatt 1650
tttacaagga aataaaatac aaatcttggt ttttctaaaa aaaaaaaaaa 1700
aaaagt 1706

```

```

<210> 213
<211> 299
<212> PRT
<213> Homo sapiens

```

<400> 213

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asn | Asp | Ser | Leu | Arg | Thr | Asn | Val | Phe | Val | Arg | Phe | Gln | Pro |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Glu | Thr | Ile | Ala | Cys | Ala | Cys | Ile | Tyr | Leu | Ala | Ala | Arg | Ala | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Gln | Ile | Pro | Leu | Pro | Thr | Arg | Pro | His | Trp | Phe | Leu | Leu | Phe | Gly |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Thr | Thr | Glu | Glu | Glu | Ile | Gln | Glu | Ile | Cys | Ile | Glu | Thr | Leu | Arg |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Leu | Tyr | Thr | Arg | Lys | Lys | Pro | Asn | Tyr | Glu | Leu | Leu | Glu | Lys | Glu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Val | Glu | Lys | Arg | Lys | Val | Ala | Leu | Gln | Glu | Ala | Lys | Leu | Lys | Ala |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Lys | Gly | Leu | Asn | Pro | Asp | Gly | Thr | Pro | Ala | Leu | Ser | Thr | Leu | Gly |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Gly | Phe | Ser | Pro | Ala | Ser | Lys | Pro | Ser | Ser | Pro | Arg | Glu | Val | Lys |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Ala | Glu | Glu | Lys | Ser | Pro | Ile | Ser | Ile | Asn | Val | Lys | Thr | Val | Lys |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Lys | Glu | Pro | Glu | Asp | Arg | Gln | Gln | Ala | Ser | Lys | Ser | Pro | Tyr | Asn |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Gly | Val | Arg | Lys | Asp | Ser | Lys | Arg | Ser | Arg | Asn | Ser | Arg | Ser | Ala |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ser | Arg | Ser | Arg | Ser | Arg | Thr | Arg | Ser | Arg | Ser | Arg | Ser | His | Thr |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Pro | Arg | Arg | His | Tyr | Asn | Asn | Arg | Arg | Ser | Arg | Ser | Gly | Thr | Tyr |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Ser | Ser | Arg | Ser | Arg | Ser | Arg | Ser | Arg | Ser | His | Ser | Glu | Ser | Pro |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Arg | Arg | His | His | Asn | His | Gly | Ser | Pro | His | Leu | Lys | Ala | Lys | His |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Thr | Arg | Asp | Asp | Leu | Lys | Ser | Ser | Asn | Arg | His | Gly | His | Lys | Arg |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Lys | Lys | Ser | Arg | Ser | Arg | Ser | Gln | Ser | Lys | Ser | Arg | Asp | His | Ser |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Asp | Ala | Ala | Lys | Lys | His | Arg | His | Glu | Arg | Gly | His | His | Arg | Asp |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Arg | Arg | Glu | Arg | Ser | Arg | Ser | Phe | Glu | Arg | Ser | His | Lys | Ser | Lys |

275

280

285

His His Gly Gly Ser Arg Ser Gly His Gly Arg His Arg Arg
 290 295

<210> 214

<211> 730

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 72-73, 85, 91, 127, 226, 268, 454, 484, 513, 566, 663

<223> unknown base

<400> 214

tggggataaa ggaaaaatgg tcaggtatta atggcttaaa gattattgga 50
 aggggtttat cattttttga anntattcgg gtcanaattg nctttgaaaa 100
 gcattgcttt ttacagaaat atattanctt tttagagtaa tttctagttt 150
 ggattgtaat atgaaattat ttaaaagggc ttcgctcata tataggaaaa 200
 tcgcatatgg tcctagtatt aaattnttat tgcttactga tttttttgag 250
 ttaagagttg ttatatgnta gaatatgagg atgtgaatat aaataagaga 300
 agaaaaaaga ataaagtaga ttgagtctcc aattttatgt aagcttcaga 350
 agaactgggtt tgttttacatg caagcttata gttgaaatat ttttcaggaa 400
 ttacatgaat gacagtcttc gaaccaatgt gtttgttcga tttcaaccag 450
 agantatagc atgtgcttgc atctaccttg cagntagagc acttcagatt 500
 ccgttgccaa ctngtcccca ttggtttctt ctttttggtg ctacagaaga 550
 ggaaatccag gaaatntgca tagaaacact taggctttat accagaaaaa 600
 agccaaacta tgaattactg gaaaaagaag tagaaaaaag aaaagtagcc 650
 ttacaagaag ccnaattaaa agcaaaggga ttgaatccgg atggaactcc 700
 agccctttca accctgggtg gattttctcc 730

<210> 215

<211> 1807

<212> DNA

<213> Homo sapiens

<400> 215

ggcacgaggc ctogtgccaa gcttggcacg aggggtgcacc gcgttctcgc 50
 acgcgtcatg gcggctctcg gagtacagct ggtggtgacc ctgctcactg 100
 ccaccctcat gcacaggctg gcgccacact gctccttcgc gcgctggctg 150

ctctgtaacg gcagtttgtt ccgatacaag caccctgtctg aggaggagct 200
tcggggccctg gcggggaagc cgaggcccag aggcaggaaa gagcgggtggg 250
ccaatggcct tagtgaggag aagccactgt ctgtgccccg agatgccccg 300
ttccagctgg agacctgccc cctcacgacc gtggatgccc tggtcctgcg 350
cttcttctctg gagtaccagt ggtttgtgga ctttgctgtg tactcggggcg 400
gcggtgtacct cttcacagag gcctactact acatgctggg accagccaag 450
gagactaaca ttgctgtgtt ctgggtgcctg ctcacggtga ctttctccat 500
caagatgttc ctgacagtga cacggctgta cttcagcgcc gaggaggggg 550
gtgagcgctc tgtctgcctc acctttgcct tcctcttctt gctgctggcc 600
atgctgggtgc aagtgggtgcg ggaggagacc ctcgagctgg gcctggagcc 650
tggctctggcc agcatgacct agaacttaga gccacttctg aagaagcagg 700
gctgggactg ggcgcttctt gtggccaagc tggctatccg cgtgggactg 750
gcagtgggtg gctctgtgct ggggtgcctt ctcaccttcc caggcctgcg 800
gctggcccag acccaccggg acgcactgac catgtcggag gacagacca 850
tgctgcagtt cctcctgcac accagcttcc tgtctcccct gttcatcctg 900
tggctctgga caaagcccat tgcacgggac ttctgcacc agccgccgtt 950
tggggagacg cgtttctccc tgctgtccga ttctgccttc gactctgggc 1000
gcctctgggt gctgggtggtg ctgtgcctgc tgcggctggc ggtgaccgg 1050
ccccacctgc aggctacct gtgcctggcc aaggcccggg tggagcagct 1100
gcgaagggag gctggccgca tcgaagcccg tgaaatccag cagaggggtg 1150
tccgagtcta ctgctatgtg accgtgggtga gcttgagta cctgacgccg 1200
ctcatcctca ccctcaactg cacacttctg ctcaagacgc tgggaggcta 1250
ttcctggggc ctgggcccag ctctctact atccccgac ccatactcag 1300
ccagcgctgc ccccatcggc tctggggagg acgaagtcca gcagactgca 1350
gcgcggattg ccggggccct ggggtggcctg cttactcccc tcttctccg 1400
tggcgtcctg gcctacctca tctgggtggac ggctgcctgc cagctgctcg 1450
ccagcctttt cggcctctac ttccaccagc acttggcagg ctctagctg 1500
cctgcagacc ctctggggc cctgaggtct gttcctgggg cagcgggaca 1550

ctagcctgcc ccctctgttt gcgccccgt gtccccagct gcaagggtggg 1600
 gccggactcc ccggcggttc cttcaccaca gtgcctgacc cgcgggcccc 1650
 cttggacgcc gagtttctgc ctcagaactg tctctcctgg gccagcagc 1700
 atgagggtcc cgaggccatt gtctccgaag cgtatgtgcc aggtttgagt 1750
 ggcgagggtg atgctggctg ctcttctgaa caataaagg agcatgccga 1800
 ttttta 1807

<210> 216
 <211> 479
 <212> PRT
 <213> Homo sapiens

<400> 216
 Met Ala Val Leu Gly Val Gln Leu Val Val Thr Leu Leu Thr Ala
 1 5 10 15
 Thr Leu Met His Arg Leu Ala Pro His Cys Ser Phe Ala Arg Trp
 20 25 30
 Leu Leu Cys Asn Gly Ser Leu Phe Arg Tyr Lys His Pro Ser Glu
 35 40 45
 Glu Glu Leu Arg Ala Leu Ala Gly Lys Pro Arg Pro Arg Gly Arg
 50 55 60
 Lys Glu Arg Trp Ala Asn Gly Leu Ser Glu Glu Lys Pro Leu Ser
 65 70 75
 Val Pro Arg Asp Ala Pro Phe Gln Leu Glu Thr Cys Pro Leu Thr
 80 85 90
 Thr Val Asp Ala Leu Val Leu Arg Phe Phe Leu Glu Tyr Gln Trp
 95 100 105
 Phe Val Asp Phe Ala Val Tyr Ser Gly Gly Val Tyr Leu Phe Thr
 110 115 120
 Glu Ala Tyr Tyr Tyr Met Leu Gly Pro Ala Lys Glu Thr Asn Ile
 125 130 135
 Ala Val Phe Trp Cys Leu Leu Thr Val Thr Phe Ser Ile Lys Met
 140 145 150
 Phe Leu Thr Val Thr Arg Leu Tyr Phe Ser Ala Glu Glu Gly Gly
 155 160 165
 Glu Arg Ser Val Cys Leu Thr Phe Ala Phe Leu Phe Leu Leu Leu
 170 175 180
 Ala Met Leu Val Gln Val Val Arg Glu Glu Thr Leu Glu Leu Gly
 185 190 195

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Glu | Pro | Gly | Leu | Ala | Ser | Met | Thr | Gln | Asn | Leu | Glu | Pro | Leu | 200 | 205 | 210 |
| Leu | Lys | Lys | Gln | Gly | Trp | Asp | Trp | Ala | Leu | Pro | Val | Ala | Lys | Leu | 215 | 220 | 225 |
| Ala | Ile | Arg | Val | Gly | Leu | Ala | Val | Val | Gly | Ser | Val | Leu | Gly | Ala | 230 | 235 | 240 |
| Phe | Leu | Thr | Phe | Pro | Gly | Leu | Arg | Leu | Ala | Gln | Thr | His | Arg | Asp | 245 | 250 | 255 |
| Ala | Leu | Thr | Met | Ser | Glu | Asp | Arg | Pro | Met | Leu | Gln | Phe | Leu | Leu | 260 | 265 | 270 |
| His | Thr | Ser | Phe | Leu | Ser | Pro | Leu | Phe | Ile | Leu | Trp | Leu | Trp | Thr | 275 | 280 | 285 |
| Lys | Pro | Ile | Ala | Arg | Asp | Phe | Leu | His | Gln | Pro | Pro | Phe | Gly | Glu | 290 | 295 | 300 |
| Thr | Arg | Phe | Ser | Leu | Leu | Ser | Asp | Ser | Ala | Phe | Asp | Ser | Gly | Arg | 305 | 310 | 315 |
| Leu | Trp | Leu | Leu | Val | Val | Leu | Cys | Leu | Leu | Arg | Leu | Ala | Val | Thr | 320 | 325 | 330 |
| Arg | Pro | His | Leu | Gln | Ala | Tyr | Leu | Cys | Leu | Ala | Lys | Ala | Arg | Val | 335 | 340 | 345 |
| Glu | Gln | Leu | Arg | Arg | Glu | Ala | Gly | Arg | Ile | Glu | Ala | Arg | Glu | Ile | 350 | 355 | 360 |
| Gln | Gln | Arg | Val | Val | Arg | Val | Tyr | Cys | Tyr | Val | Thr | Val | Val | Ser | 365 | 370 | 375 |
| Leu | Gln | Tyr | Leu | Thr | Pro | Leu | Ile | Leu | Thr | Leu | Asn | Cys | Thr | Leu | 380 | 385 | 390 |
| Leu | Leu | Lys | Thr | Leu | Gly | Gly | Tyr | Ser | Trp | Gly | Leu | Gly | Pro | Ala | 395 | 400 | 405 |
| Pro | Leu | Leu | Ser | Pro | Asp | Pro | Ser | Ser | Ala | Ser | Ala | Ala | Pro | Ile | 410 | 415 | 420 |
| Gly | Ser | Gly | Glu | Asp | Glu | Val | Gln | Gln | Thr | Ala | Ala | Arg | Ile | Ala | 425 | 430 | 435 |
| Gly | Ala | Leu | Gly | Gly | Leu | Leu | Thr | Pro | Leu | Phe | Leu | Arg | Gly | Val | 440 | 445 | 450 |
| Leu | Ala | Tyr | Leu | Ile | Trp | Trp | Thr | Ala | Ala | Cys | Gln | Leu | Leu | Ala | 455 | 460 | 465 |
| Ser | Leu | Phe | Gly | Leu | Tyr | Phe | His | Gln | His | Leu | Ala | Gly | Ser | | 470 | 475 | |

<210> 217
<211> 574
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 5, 146
<223> unknown base

<400> 217
cgatngcacg cgtcaatggc ggtcctcgga gtacagctgg tggtagacct 50

gctcactgcc accctcatgc acaggctggc gccacactgc tccttcgcgc 100

gctggctgct ctgtaacggc agtttggtcc gatacaagca cccgtnttga 150

ggaggagctt cgggccctgg cggggaagcc gagggccaga ggcaggaaag 200

agcggtagggc caatggcctt agtgaggaga agccactgtc tgtgccccga 250

gatgccccgt tccagctgga gacctgcccc ctcacgaccg tggatgccct 300

ggtcctgcgc ttcttcctgg agtaccagtg gtttgtaggac tttgctgtgt 350

actcggggcgg cgtgtacctc ttcacagagg cctactacta catgctggga 400

ccagccaagg agactaacat tgctgtgttc tggtagcctgc tcacagtgc 450

cttctccatc aagatgttcc tgacagtgc acggctgtac ttcagcgccg 500

aggagggggg tgagcgctct gtctgcctca cctttgcctt cctcttcctg 550

ctgctggcca tgctggtagc agcg 574

<210> 218
<211> 2571
<212> DNA
<213> Homo sapiens

<400> 218
ggttcctaca tcctctcatc tgagaatcag agagcataat cttcttacgg 50

gcccgtgatt tattaacgtg gcttaatctg aaggttctca gtcaaattct 100

ttgtgatcta ctgattgtgg gggcatggca aggtttgctt aaaggagctt 150

ggctgggtttg ggcccttgta gctgacagaa ggtggccagg gagaatgcag 200

cacactgctc ggagaatgaa ggcgcttctg ttgctggctc tgccttggct 250

cagtctgct aactacattg acaatgtggg caacctgcac ttcctgtatt 300

cagaactctg taaagggtgc tcccactacg gcctgaccaa agataggaag 350

aggcgctcac aagatggctg tccagacggc tgtgcgagcc tcacagccac 400

ggctccctcc ccagaggttt ctgcagctgc caccatctcc ttaatgacag 450
acgagcctgg cctagacaac cctgcctacg tgtcctcggc agaggacggg 500
cagccagcaa tcagcccagt ggactctggc cggagcaacc gaactagggc 550
acggcccttt gagagatcca ctattagaag cagatcattt aaaaaataa 600
atcgagcttt gagtgttctt cgaaggacaa agagcgggag tgcagttgcc 650
aaccatgccg accagggcag ggaaaattct gaaaacacca ctgcccctga 700
agtctttcca aggttgtacc acctgattcc agatggtgaa attaccagca 750
tcaagatcaa tcgagtagat cccagtgaag gcctctctat taggctgggtg 800
ggaggtagcg aaaccccact ggtccatata attatccaac acatttatcg 850
tgatgggggtg atcgccagag acggccggct actgccagga gacatcattc 900
taaagggtcaa cgggatggac atcagcaatg tccctcacia ctacgctgtg 950
cgtctcctgc ggcagccctg ccaggtgctg tggctgactg tgatgcgtga 1000
acagaagttc cgcagcagga acaatggaca ggccccgat gcctacagac 1050
cccagatga cagctttcat gtgattctca aaaaagtag cccgaggag 1100
cagcttgga taaaactggt ggcgaagggt gatgagcctg gggttttcat 1150
cttcaatgtg ctggatggcg gtgtggcata tcgacatggt cagcttgagg 1200
agaatgaccg tgtgttagcc atcaatggac atgatcttcg atatggcagc 1250
ccagaaagtg cggctcatct gattcaggcc agtgaaagac gtgttcacct 1300
cgtcgtgtcc cgccagggtc ggcagcggag ccctgacatc tttcaggaag 1350
ccggctggaa cagcaatggc agctgggtccc cagggccagg ggagaggagc 1400
aacactccca agcccccca tcctacaatt acttgtcatg agaaggtggt 1450
aaatatccaa aaagaccccc gtgaatctct cggcatgacc gtcgcagggg 1500
gagcatcaca tagagaatgg gatttgccta tctatgtcat cagtgttgag 1550
cccggaggag tcataagcag agatggaaga ataaaaacag gtgacatttt 1600
gttgaatgtg gatggggctg aactgacaga ggtcagccgg agtgaggcag 1650
tggcattatt gaaaagaaca tcctcctcga tagtactcaa agctttggaa 1700
gtcaaagagt atgagcccca ggaagactgc agcagcccag cagccctgga 1750
ctccaaccac aacatggccc caccagtgta ctgggtccca tcctgggtca 1800
tgtggctgga attaccacgg tgcttgata actgtaaaga tattgtatta 1850

cgaagaaaca cagctggaag tctgggcttc tgcattgtag gaggttatga 1900
agaatacaat ggaaacaaac cttttttcat caaatccatt gttgaaggaa 1950
caccagcata caatgatgga agaattagat gtggtgatat tcttcttgct 2000
gtcaatggta gaagtacatc aggaatgata catgcttgct tggcaagact 2050
gctgaaagaa cttaaaggaa gaattactct aactattggt tcttggcctg 2100
gcactttttt atagaatcaa tgatgggtca gaggaaaaca gaaaaatcac 2150
aaataggcta agaagttgaa acactatatt tatcttgta gtttttatat 2200
ttaaagaaag aatacattgt aaaaatgtca ggaaaagtat gatcatctaa 2250
tgaaagccag ttacacctca gaaaatatga ttccaaaaaa attaaaacta 2300
ctagtttttt ttcagtgtgg aggatttctc attactctac aacattgttt 2350
atattttttc tattcaataa aaagccctaa aacaactaaa atgattgatt 2400
tgtatacccc actgaattca agctgattta aatttaaaat ttggtatatg 2450
ctgaagtctg ccaagggtag attatggcca tttttaattt acagctaaaa 2500
tattttttta aatgcattgc tgagaaacgt tgctttcatc aaacaagaat 2550
aaatattttt cagaagttaa a 2571

<210> 219
<211> 632
<212> PRT
<213> Homo sapiens

<400> 219
Met Lys Ala Leu Leu Leu Val Leu Pro Trp Leu Ser Pro Ala
1 5 10 15
Asn Tyr Ile Asp Asn Val Gly Asn Leu His Phe Leu Tyr Ser Glu
20 25 30
Leu Cys Lys Gly Ala Ser His Tyr Gly Leu Thr Lys Asp Arg Lys
35 40 45
Arg Arg Ser Gln Asp Gly Cys Pro Asp Gly Cys Ala Ser Leu Thr
50 55 60
Ala Thr Ala Pro Ser Pro Glu Val Ser Ala Ala Ala Thr Ile Ser
65 70 75
Leu Met Thr Asp Glu Pro Gly Leu Asp Asn Pro Ala Tyr Val Ser
80 85 90
Ser Ala Glu Asp Gly Gln Pro Ala Ile Ser Pro Val Asp Ser Gly
95 100 105

| | | | |
|---|-----|-----|-----|
| Arg Ser Asn Arg Thr Arg Ala Arg Pro Phe Glu Arg Ser Thr Ile | 110 | 115 | 120 |
| Arg Ser Arg Ser Phe Lys Lys Ile Asn Arg Ala Leu Ser Val Leu | 125 | 130 | 135 |
| Arg Arg Thr Lys Ser Gly Ser Ala Val Ala Asn His Ala Asp Gln | 140 | 145 | 150 |
| Gly Arg Glu Asn Ser Glu Asn Thr Thr Ala Pro Glu Val Phe Pro | 155 | 160 | 165 |
| Arg Leu Tyr His Leu Ile Pro Asp Gly Glu Ile Thr Ser Ile Lys | 170 | 175 | 180 |
| Ile Asn Arg Val Asp Pro Ser Glu Ser Leu Ser Ile Arg Leu Val | 185 | 190 | 195 |
| Gly Gly Ser Glu Thr Pro Leu Val His Ile Ile Ile Gln His Ile | 200 | 205 | 210 |
| Tyr Arg Asp Gly Val Ile Ala Arg Asp Gly Arg Leu Leu Pro Gly | 215 | 220 | 225 |
| Asp Ile Ile Leu Lys Val Asn Gly Met Asp Ile Ser Asn Val Pro | 230 | 235 | 240 |
| His Asn Tyr Ala Val Arg Leu Leu Arg Gln Pro Cys Gln Val Leu | 245 | 250 | 255 |
| Trp Leu Thr Val Met Arg Glu Gln Lys Phe Arg Ser Arg Asn Asn | 260 | 265 | 270 |
| Gly Gln Ala Pro Asp Ala Tyr Arg Pro Arg Asp Asp Ser Phe His | 275 | 280 | 285 |
| Val Ile Leu Asn Lys Ser Ser Pro Glu Glu Gln Leu Gly Ile Lys | 290 | 295 | 300 |
| Leu Val Arg Lys Val Asp Glu Pro Gly Val Phe Ile Phe Asn Val | 305 | 310 | 315 |
| Leu Asp Gly Gly Val Ala Tyr Arg His Gly Gln Leu Glu Glu Asn | 320 | 325 | 330 |
| Asp Arg Val Leu Ala Ile Asn Gly His Asp Leu Arg Tyr Gly Ser | 335 | 340 | 345 |
| Pro Glu Ser Ala Ala His Leu Ile Gln Ala Ser Glu Arg Arg Val | 350 | 355 | 360 |
| His Leu Val Val Ser Arg Gln Val Arg Gln Arg Ser Pro Asp Ile | 365 | 370 | 375 |
| Phe Gln Glu Ala Gly Trp Asn Ser Asn Gly Ser Trp Ser Pro Gly | 380 | 385 | 390 |

| | |
|---|-------------------------|
| Pro Gly Glu Arg Ser Asn Thr Pro Lys | Pro Leu His Pro Thr Ile |
| 395 | 400 405 |
| Thr Cys His Glu Lys Val Val Asn Ile Gln Lys Asp Pro Gly Glu | |
| 410 | 415 420 |
| Ser Leu Gly Met Thr Val Ala Gly Gly Ala Ser His Arg Glu Trp | |
| 425 | 430 435 |
| Asp Leu Pro Ile Tyr Val Ile Ser Val Glu Pro Gly Gly Val Ile | |
| 440 | 445 450 |
| Ser Arg Asp Gly Arg Ile Lys Thr Gly Asp Ile Leu Leu Asn Val | |
| 455 | 460 465 |
| Asp Gly Val Glu Leu Thr Glu Val Ser Arg Ser Glu Ala Val Ala | |
| 470 | 475 480 |
| Leu Leu Lys Arg Thr Ser Ser Ser Ile Val Leu Lys Ala Leu Glu | |
| 485 | 490 495 |
| Val Lys Glu Tyr Glu Pro Gln Glu Asp Cys Ser Ser Pro Ala Ala | |
| 500 | 505 510 |
| Leu Asp Ser Asn His Asn Met Ala Pro Pro Ser Asp Trp Ser Pro | |
| 515 | 520 525 |
| Ser Trp Val Met Trp Leu Glu Leu Pro Arg Cys Leu Tyr Asn Cys | |
| 530 | 535 540 |
| Lys Asp Ile Val Leu Arg Arg Asn Thr Ala Gly Ser Leu Gly Phe | |
| 545 | 550 555 |
| Cys Ile Val Gly Gly Tyr Glu Glu Tyr Asn Gly Asn Lys Pro Phe | |
| 560 | 565 570 |
| Phe Ile Lys Ser Ile Val Glu Gly Thr Pro Ala Tyr Asn Asp Gly | |
| 575 | 580 585 |
| Arg Ile Arg Cys Gly Asp Ile Leu Leu Ala Val Asn Gly Arg Ser | |
| 590 | 595 600 |
| Thr Ser Gly Met Ile His Ala Cys Leu Ala Arg Leu Leu Lys Glu | |
| 605 | 610 615 |
| Leu Lys Gly Arg Ile Thr Leu Thr Ile Val Ser Trp Pro Gly Thr | |
| 620 | 625 630 |

Phe Leu

<210> 220
 <211> 773
 <212> DNA
 <213> Homo sapiens

<400> 220
 ccaaagtgat catttgaaaa agagatatcc acatcttcaa gcccatataa 50
 aggatagaag ctgcacaggg cagctttact tactccagca ccttcctctc 100
 ccaggcaaat ggtgctgacc atctttggga tacaatctca tggatacgag 150
 gtttttaaca tcacagccc aagcaacaat ggtggcaatg ttcaggagac 200
 agtgacaatt gataatgaaa aaaataccgc catcgttaac atccatgcag 250
 gatcatgctc ttctaccaca atttttgact ataaacatgg ctacattgca 300
 tccaggggtgc tctcccgaag agcctgcttt atcctgaaga tggaccatca 350
 gaacatccct cctctgaaca atctccaatg gtacatctat gagaaacagg 400
 ctctggacaa catgttctcc aacaaataca cctgggtcaa gtacaaccct 450
 ctggagtcctc tgatcaaaga cgtggattgg ttctgcttg ggtcacccat 500
 tgagaaaactc tgcaaacata tccctttgta taagggggaa gtggttgaaa 550
 acacacataa tgtcgggtgct ggaggctgtg caaaggctgg gctcctgggc 600
 atcttgggaa tttcaatctg tgcagacatt catgtttagg atgattagcc 650
 ctcttgtttt atcttttcaa agaaatacat ccttggttta cactcaaaag 700
 tcaaattaaa ttctttccca atgccccaac taattttgag attcagtcag 750
 aaaatataaa tgctgtattt ata 773

<210> 221
 <211> 184
 <212> PRT
 <213> Homo sapiens

<400> 221
 Met Lys Ile Leu Val Ala Phe Leu Val Val Leu Thr Ile Phe Gly
 1 5 10 15
 Ile Gln Ser His Gly Tyr Glu Val Phe Asn Ile Ile Ser Pro Ser
 20 25 30
 Asn Asn Gly Gly Asn Val Gln Glu Thr Val Thr Ile Asp Asn Glu
 35 40 45
 Lys Asn Thr Ala Ile Val Asn Ile His Ala Gly Ser Cys Ser Ser
 50 55 60
 Thr Thr Ile Phe Asp Tyr Lys His Gly Tyr Ile Ala Ser Arg Val
 65 70 75
 Leu Ser Arg Arg Ala Cys Phe Ile Leu Lys Met Asp His Gln Asn
 80 85 90

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Pro | Pro | Leu | Asn | Asn | Leu | Gln | Trp | Tyr | Ile | Tyr | Glu | Lys | Gln |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ala | Leu | Asp | Asn | Met | Phe | Ser | Asn | Lys | Tyr | Thr | Trp | Val | Lys | Tyr |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Asn | Pro | Leu | Glu | Ser | Leu | Ile | Lys | Asp | Val | Asp | Trp | Phe | Leu | Leu |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Gly | Ser | Pro | Ile | Glu | Lys | Leu | Cys | Lys | His | Ile | Pro | Leu | Tyr | Lys |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Gly | Glu | Val | Val | Glu | Asn | Thr | His | Asn | Val | Gly | Ala | Gly | Gly | Cys |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ala | Lys | Ala | Gly | Leu | Leu | Gly | Ile | Leu | Gly | Ile | Ser | Ile | Cys | Ala |
| | | | | 170 | | | | | 175 | | | | | 180 |

Asp Ile His Val

<210> 222
 <211> 992
 <212> DNA
 <213> Homo sapiens

<400> 222
 ggcacgagcc aggaactagg aggttctcac tgcccagaca gaggccctac 50
 acccaccgag gcatggggct ccctgggctg ttctgcttgg ccgtgctggc 100
 tgccagcagc ttctccaagg cacgggagga agaaattacc cctgtggtct 150
 ccattgccta caaagtcttg gaagttttcc ccaaaggccg ctgggtgctc 200
 ataacctgct gtgcacccca gccaccaccg cccatcacct attccctctg 250
 tggaaccaag aacatcaagg tggccaagaa ggtggtgaag acccagagc 300
 cggcctcctt caacctcaac gtcacactca agtccagtcc agacctgctc 350
 acctacttct gccgggcgtc ctccacctca ggtgcccattg tggacagtgc 400
 caggctacag atgcactggg agctgtggtc caagccagtg tctgagctgc 450
 gggccaactt cactctgcag gacagagggg caggccccag ggtggagatg 500
 atctgccagg cgtcctcggg cagcccacct atcaccaaca gcctgatcgg 550
 gaaggatggg caggtccacc tgcagcagag accatgccac aggcagcctg 600
 ccaacttctc cttcctgccg agccagacat cggactgggt ctggtgccag 650
 gctgcaaaca acgccaatgt ccagcacagc gccctcacag tggtgcccc 700
 aggtggtgac cagaagatgg aggactggca gggtcctctg gagagcccca 750

tccttgccctt gccgctctac aggagcaccc gccgtctgag tgaagaggag 800
 tttgggggggt tcaggatagg gaatgggggag gtcagaggac gcaaagcagc 850
 agccatgtag aatgaaccgt ccagagagcc aagcacggca gaggactgca 900
 ggccatcagc gtgcactggt cgtatttgga gttcatgcaa aatgagtgtg 950
 ttttagctgc tcttgccaca aaaaaaaaaa aaaaaaaaaa aa 992

<210> 223
 <211> 265
 <212> PRT
 <213> Homo sapiens

<400> 223
 Met Gly Leu Pro Gly Leu Phe Cys Leu Ala Val Leu Ala Ala Ser
 1 5 10 15
 Ser Phe Ser Lys Ala Arg Glu Glu Glu Ile Thr Pro Val Val Ser
 20 25 30
 Ile Ala Tyr Lys Val Leu Glu Val Phe Pro Lys Gly Arg Trp Val
 35 40 45
 Leu Ile Thr Cys Cys Ala Pro Gln Pro Pro Pro Pro Ile Thr Tyr
 50 55 60
 Ser Leu Cys Gly Thr Lys Asn Ile Lys Val Ala Lys Lys Val Val
 65 70 75
 Lys Thr His Glu Pro Ala Ser Phe Asn Leu Asn Val Thr Leu Lys
 80 85 90
 Ser Ser Pro Asp Leu Leu Thr Tyr Phe Cys Arg Ala Ser Ser Thr
 95 100 105
 Ser Gly Ala His Val Asp Ser Ala Arg Leu Gln Met His Trp Glu
 110 115 120
 Leu Trp Ser Lys Pro Val Ser Glu Leu Arg Ala Asn Phe Thr Leu
 125 130 135
 Gln Asp Arg Gly Ala Gly Pro Arg Val Glu Met Ile Cys Gln Ala
 140 145 150
 Ser Ser Gly Ser Pro Pro Ile Thr Asn Ser Leu Ile Gly Lys Asp
 155 160 165
 Gly Gln Val His Leu Gln Gln Arg Pro Cys His Arg Gln Pro Ala
 170 175 180
 Asn Phe Ser Phe Leu Pro Ser Gln Thr Ser Asp Trp Phe Trp Cys
 185 190 195
 Gln Ala Ala Asn Asn Ala Asn Val Gln His Ser Ala Leu Thr Val
 200 205 210

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Pro | Pro | Gly | Gly | Asp | Gln | Lys | Met | Glu | Asp | Trp | Gln | Gly | Pro |
| | | | 215 | | | | | | 220 | | | | 225 | |
| Leu | Glu | Ser | Pro | Ile | Leu | Ala | Leu | Pro | Leu | Tyr | Arg | Ser | Thr | Arg |
| | | | 230 | | | | | | 235 | | | | 240 | |
| Arg | Leu | Ser | Glu | Glu | Glu | Phe | Gly | Gly | Phe | Arg | Ile | Gly | Asn | Gly |
| | | | 245 | | | | | | 250 | | | | 255 | |
| Glu | Val | Arg | Gly | Arg | Lys | Ala | Ala | Ala | Met | | | | | |
| | | | 260 | | | | | | 265 | | | | | |

<210> 224

<211> 1297

<212> DNA

<213> Homo sapiens

<400> 224

```

ggtccttaat ggcagcagcc gccgctacca agatccttct gtgcctcccg 50
cttctgctcc tgtgtgccgg ctgggtcccg gctgggagcg ccgacctca 100
ctctctttgc tatgacatca ccgtcatccc taagttcaga cctggaccac 150
gggtggtgtgc ggttcaaggc caggtggatg aaaagacttt tcttcactat 200
gactgtggca acaagacagt cacacctgtc agtcccctgg ggaagaaact 250
aaatgtcaca acggcctgga aagcacagaa ccagtagctg agagaggtgg 300
tggaataact tacagagcaa ctgcgtgaca ttcagctgga gaattacaca 350
cccaaggaac ccctcaccct gcaggcaagg atgtcttgtg agcagaaagc 400
tgaaggacac agcagtggat cttggcagtt cagtttcgat gggcagatct 450
tctctctctt tgactcagag aagagaatgt ggacaacggt tcatcctgga 500
gccagaaaga tgaaagaaaa gtgggagaat gacaagggtg tggccatgtc 550
cttccattac ttctcaatgg gagactgtat aggatggctt gaggacttct 600
tgatgggcat ggacagcacc ctggagccaa gtgcaggagc accactcgcc 650
atgtcctcag gcacaaccca actcagggcc acagccacca ccctcactct 700
ttgtgcctc ctcacatccc tcccctgctt cactctccct ggcactctgag 750
gagagtcctt tagagtgaca ggttaaagct gatacaaaaa ggctcctgtg 800
agcacggtct tgatcaaact cgcccttctg tctggccagc tgcccacgac 850
ctacggtgta tgtccagtgg cctccagcag atcatgatga catcatggac 900
ccaatagctc attcactgcc ttgattcctt ttgccaacaa ttttaccagc 950

```

agttatacct aacatattat gcaattttct cttggtgcta cctgatggaa 1000
 ttcctgcact taaagttctg gctgactaaa caagatatat cattttcttt 1050
 cttctctttt tgtttgaaa atcaagtact tctttgaatg atgatctctt 1100
 tcttgcaaat gatattgtca gtaaaataat cacgntagac ttcagacctc 1150
 tggggattct ttccgtgtcc tgaaagagaa tttttaaatt atttaataag 1200
 aaaaaattta tattaatgat tgtttccttt agtaatttat tgttctgtac 1250
 tgatatttaa ataaagagtt ctatttccca aaaaaaaaaa aaaaaaa 1297

<210> 225

<211> 246

<212> PRT

<213> Homo sapiens

<400> 225

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Ala | Ala | Ala | Ala | Thr | Lys | Ile | Leu | Leu | Cys | Leu | Pro | Leu | 1 | 5 | 10 | 15 |
| Leu | Leu | Leu | Leu | Ser | Gly | Trp | Ser | Arg | Ala | Gly | Arg | Ala | Asp | Pro | 20 | 25 | 30 | |
| His | Ser | Leu | Cys | Tyr | Asp | Ile | Thr | Val | Ile | Pro | Lys | Phe | Arg | Pro | 35 | 40 | 45 | |
| Gly | Pro | Arg | Trp | Cys | Ala | Val | Gln | Gly | Gln | Val | Asp | Glu | Lys | Thr | 50 | 55 | 60 | |
| Phe | Leu | His | Tyr | Asp | Cys | Gly | Asn | Lys | Thr | Val | Thr | Pro | Val | Ser | 65 | 70 | 75 | |
| Pro | Leu | Gly | Lys | Lys | Leu | Asn | Val | Thr | Thr | Ala | Trp | Lys | Ala | Gln | 80 | 85 | 90 | |
| Asn | Pro | Val | Leu | Arg | Glu | Val | Val | Asp | Ile | Leu | Thr | Glu | Gln | Leu | 95 | 100 | 105 | |
| Arg | Asp | Ile | Gln | Leu | Glu | Asn | Tyr | Thr | Pro | Lys | Glu | Pro | Leu | Thr | 110 | 115 | 120 | |
| Leu | Gln | Ala | Arg | Met | Ser | Cys | Glu | Gln | Lys | Ala | Glu | Gly | His | Ser | 125 | 130 | 135 | |
| Ser | Gly | Ser | Trp | Gln | Phe | Ser | Phe | Asp | Gly | Gln | Ile | Phe | Leu | Leu | 140 | 145 | 150 | |
| Phe | Asp | Ser | Glu | Lys | Arg | Met | Trp | Thr | Thr | Val | His | Pro | Gly | Ala | 155 | 160 | 165 | |
| Arg | Lys | Met | Lys | Glu | Lys | Trp | Glu | Asn | Asp | Lys | Val | Val | Ala | Met | 170 | 175 | 180 | |
| Ser | Phe | His | Tyr | Phe | Ser | Met | Gly | Asp | Cys | Ile | Gly | Trp | Leu | Glu | | | | |

| | | | | | |
|---|-----|--|-----|--|-----|
| | 185 | | 190 | | 195 |
| Asp Phe Leu Met Gly Met Asp Ser Thr Leu Glu Pro Ser Ala Gly | | | | | |
| | 200 | | 205 | | 210 |
| Ala Pro Leu Ala Met Ser Ser Gly Thr Thr Gln Leu Arg Ala Thr | | | | | |
| | 215 | | 220 | | 225 |
| Ala Thr Thr Leu Ile Leu Cys Cys Leu Leu Ile Ile Leu Pro Cys | | | | | |
| | 230 | | 235 | | 240 |
| Phe Ile Leu Pro Gly Ile | | | | | |
| | 245 | | | | |

<210> 226
 <211> 735
 <212> DNA
 <213> Homo sapiens

<400> 226
 gggaaagcca ttctgaaaac ccatctatac aaactatata ttttcatttc 50
 tgctgctagc tgccttgggc ctcaacaattt tcattctgtt ttctgacttt 100
 caagttatat accgtggaat ggagttgatc ccaaccataa catcgtggag 150
 ggttttaatt ttggtggtag cctcaccca attctgggtgt ggctttcttt 200
 gcagaggatt ccaccttcaa aatcatgaac tctggctgtt gatcaaaaga 250
 gaatttggat tctactctaa aagtcaatat aggacttggc aaaagaagct 300
 agcagaagac tcaacctggc ctcccataaa caggacagat tattcaggtg 350
 atggcaaaaa tggattctac atcaacggag gctatgaaag ccatgaacag 400
 attccaaaaa gaaaactcaa attggggaggc caaccacag aacagcattt 450
 ctgggccagg ctgtaatcag aattgtcgtc gtacatgctc aacagcattg 500
 cttttttccc caaaattaac acattgtgga gaagtgatga tactctcccc 550
 ttacctttcc tctctccatt caagcattca aagtatattt tcaatgaatt 600
 aaaccttgca gcaagggacc ttagataggc ttattctgac tgtatgcttt 650
 accaatgaga gaaaaaatg catttcctgt atcatccttt tcaataaact 700
 gtattcattt tgaaaaaaaa aaaaaaaaaa aaaaa 735

<210> 227
 <211> 115
 <212> PRT
 <213> Homo sapiens

<400> 227
 Met Glu Leu Ile Pro Thr Ile Thr Ser Trp Arg Val Leu Ile Leu

| | | | |
|---|-----|-----|-----|
| 1 | 5 | 10 | 15 |
| Val Val Ala Leu Thr Gln Phe Trp Cys Gly Phe Leu Cys Arg Gly | | | |
| | 20 | 25 | 30 |
| Phe His Leu Gln Asn His Glu Leu Trp Leu Leu Ile Lys Arg Glu | | | |
| | 35 | 40 | 45 |
| Phe Gly Phe Tyr Ser Lys Ser Gln Tyr Arg Thr Trp Gln Lys Lys | | | |
| | 50 | 55 | 60 |
| Leu Ala Glu Asp Ser Thr Trp Pro Pro Ile Asn Arg Thr Asp Tyr | | | |
| | 65 | 70 | 75 |
| Ser Gly Asp Gly Lys Asn Gly Phe Tyr Ile Asn Gly Gly Tyr Glu | | | |
| | 80 | 85 | 90 |
| Ser His Glu Gln Ile Pro Lys Arg Lys Leu Lys Leu Gly Gly Gln | | | |
| | 95 | 100 | 105 |
| Pro Thr Glu Gln His Phe Trp Ala Arg Leu | | | |
| | 110 | 115 | |

<210> 228

<211> 2185

<212> DNA

<213> Homo sapiens

<400> 228

gttctccttt ccgagccaaa atcccaggcg atggtgaatt atgaacgtgc 50

cacaccatga agctcttgtg gcaggtaact gtgcaccacc acacctggaa 100

tgccatcctg ctcccgttcg tctacctcac ggcgcaagtg tggattctgt 150

gtgcagccat cgctgctgcc gcctcagccg ggccccagaa ctgcccctcc 200

gtttgctcgt gcagtaacca gttcagcaag gtggtgtgca cgcgccgggg 250

cctctccgag gtcccgagg gtattccctc gaacacccgg tacctcaacc 300

tcatggagaa caacatccag atgatccagg ccgacacctt ccgccacctc 350

caccacctgg aggtcctgca gttgggcagg aactccatcc ggagattga 400

ggtggggggc ttcaacggcc tggccagcct caacaccctg gagctgttcg 450

acaactggct gacagtcac cctagcgggg cctttgaata cctgtccaag 500

ctgcgggagc tctggcttcg caacaacccc atcgaaagca tcccctctta 550

cgccttcaac cgggtgccct cctcatgcg cctggacttg ggggagctca 600

agaagctgga gtatatctct gagggagctt ttgaggggct gttcaacctc 650

aagtatctga acttgggcat gtgcaacatt aaagacatgc ccaatctcac 700

ccccctggtg gggctggagg agctggagat gtcagggaac cacttccttg 750
agatcaggcc tggctccttc catggcctga gtcacctcaa gaagctctgg 800
gtcatgaact cacaggctcag cctgattgag cggaatgctt ttgacgggct 850
ggcttcactt gtggaactca acttggccca caataacctc tcttctttgc 900
cccatgacct ctttaccctg ctgagggtacc tgggtggagtt gcatctacac 950
cacaaccctt ggaactgtga ttgtgacatt ctgtggctag cctgggtggct 1000
tcgagagtat ataccaccca attccacctg ctgtggccgc tgtcatgctc 1050
ccatgcacat gcgaggccgc tacctcgtgg aggtggacca ggcctccttc 1100
cagtgtcttg ccccttcat catggacgca cctcgagacc tcaacatttc 1150
tgaggggtcg atggcagaac ttaagtgtcg gactccccct atgtectccg 1200
tgaagtgggt gctgccaat gggacagtgc tcagccacgc ctcccgccac 1250
ccaaggatct ctgtcctcaa cgacggcacc ttgaactttt cccacgtgct 1300
gctttcagac actgggggtgt acacatgcat ggtgaccaat gttgcaggca 1350
actccaacgc ctcggcctac ctcaatgtga gcacggctga gcttaacacc 1400
tccaactaca gtttcttcac cacagtaaca gtggagacca cggagatctc 1450
gcctgaggac acaacgcgaa agtacaagcc tgttcctacc acgtccactg 1500
gttaccagcc ggcataatac acctctacca cgggtgctcat tcagactacc 1550
cgtgtgcccc agcagggtggc agtaccgcgc acagacacca ctgacaagat 1600
gcagaccagc ctggatgaag tcatgaagac caccaagatc atcattggct 1650
gctttgtggc agtgactctg ctagctgccg ccatgttgat tgtcttctat 1700
aaacttcgta agcggcacca gcagcggagt acagtcacag ccgcccggac 1750
tgttgagata atccagggtg acgaagacat cccagcagca acatccgcag 1800
cagcaacagc agctccgtcc ggtgtatcag gtgagggggc agtagtgctg 1850
cccacaattc atgaccatat taactacaac acctacaaac cagcacatgg 1900
ggcccactgg acagaaaaca gcctggggaa ctctctgcac cccacagtca 1950
ccactatctc tgaaccttat ataattcaga cccataccaa ggacaaggta 2000
caggaaactc aaatatgact cccctcccc aaaaaactta taaaatgcaa 2050
tagaatgcac acaaagacag caacttttgt acagagtggg gagagacttt 2100
ttcttgata tgcttatata ttaagtctat gggctgggta aaaaaaacag 2150

attatattaa aatttaaaga caaaaagtca aaaca 2185

<210> 229

<211> 653

<212> PRT

<213> Homo sapiens

<400> 229

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Leu | Leu | Trp | Gln | Val | Thr | Val | His | His | His | Thr | Trp | Asn |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ile | Leu | Leu | Pro | Phe | Val | Tyr | Leu | Thr | Ala | Gln | Val | Trp | Ile |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Cys | Ala | Ala | Ile | Ala | Ala | Ala | Ala | Ser | Ala | Gly | Pro | Gln | Asn |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Pro | Ser | Val | Cys | Ser | Cys | Ser | Asn | Gln | Phe | Ser | Lys | Val | Val |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Thr | Arg | Arg | Gly | Leu | Ser | Glu | Val | Pro | Gln | Gly | Ile | Pro | Ser |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Thr | Arg | Tyr | Leu | Asn | Leu | Met | Glu | Asn | Asn | Ile | Gln | Met | Ile |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Ala | Asp | Thr | Phe | Arg | His | Leu | His | His | Leu | Glu | Val | Leu | Gln |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Gly | Arg | Asn | Ser | Ile | Arg | Gln | Ile | Glu | Val | Gly | Ala | Phe | Asn |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Leu | Ala | Ser | Leu | Asn | Thr | Leu | Glu | Leu | Phe | Asp | Asn | Trp | Leu |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Val | Ile | Pro | Ser | Gly | Ala | Phe | Glu | Tyr | Leu | Ser | Lys | Leu | Arg |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Leu | Trp | Leu | Arg | Asn | Asn | Pro | Ile | Glu | Ser | Ile | Pro | Ser | Tyr |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Phe | Asn | Arg | Val | Pro | Ser | Leu | Met | Arg | Leu | Asp | Leu | Gly | Glu |
| | | | | 170 | | | | | 175 | | | | | 180 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Lys | Lys | Leu | Glu | Tyr | Ile | Ser | Glu | Gly | Ala | Phe | Glu | Gly | Leu |
| | | | | 185 | | | | | 190 | | | | | 195 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Asn | Leu | Lys | Tyr | Leu | Asn | Leu | Gly | Met | Cys | Asn | Ile | Lys | Asp |
| | | | | 200 | | | | | 205 | | | | | 210 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Pro | Asn | Leu | Thr | Pro | Leu | Val | Gly | Leu | Glu | Glu | Leu | Glu | Met |
| | | | | 215 | | | | | 220 | | | | | 225 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gly | Asn | His | Phe | Pro | Glu | Ile | Arg | Pro | Gly | Ser | Phe | His | Gly |
| | | | | 230 | | | | | 235 | | | | | 240 |

| | | | |
|---|-----|-----|-----|
| Leu Ser Ser Leu Lys Lys Leu Trp Val Met Asn Ser Gln Val Ser | 245 | 250 | 255 |
| Leu Ile Glu Arg Asn Ala Phe Asp Gly Leu Ala Ser Leu Val Glu | 260 | 265 | 270 |
| Leu Asn Leu Ala His Asn Asn Leu Ser Ser Leu Pro His Asp Leu | 275 | 280 | 285 |
| Phe Thr Pro Leu Arg Tyr Leu Val Glu Leu His Leu His His Asn | 290 | 295 | 300 |
| Pro Trp Asn Cys Asp Cys Asp Ile Leu Trp Leu Ala Trp Trp Leu | 305 | 310 | 315 |
| Arg Glu Tyr Ile Pro Thr Asn Ser Thr Cys Cys Gly Arg Cys His | 320 | 325 | 330 |
| Ala Pro Met His Met Arg Gly Arg Tyr Leu Val Glu Val Asp Gln | 335 | 340 | 345 |
| Ala Ser Phe Gln Cys Ser Ala Pro Phe Ile Met Asp Ala Pro Arg | 350 | 355 | 360 |
| Asp Leu Asn Ile Ser Glu Gly Arg Met Ala Glu Leu Lys Cys Arg | 365 | 370 | 375 |
| Thr Pro Pro Met Ser Ser Val Lys Trp Leu Leu Pro Asn Gly Thr | 380 | 385 | 390 |
| Val Leu Ser His Ala Ser Arg His Pro Arg Ile Ser Val Leu Asn | 395 | 400 | 405 |
| Asp Gly Thr Leu Asn Phe Ser His Val Leu Leu Ser Asp Thr Gly | 410 | 415 | 420 |
| Val Tyr Thr Cys Met Val Thr Asn Val Ala Gly Asn Ser Asn Ala | 425 | 430 | 435 |
| Ser Ala Tyr Leu Asn Val Ser Thr Ala Glu Leu Asn Thr Ser Asn | 440 | 445 | 450 |
| Tyr Ser Phe Phe Thr Thr Val Thr Val Glu Thr Thr Glu Ile Ser | 455 | 460 | 465 |
| Pro Glu Asp Thr Thr Arg Lys Tyr Lys Pro Val Pro Thr Thr Ser | 470 | 475 | 480 |
| Thr Gly Tyr Gln Pro Ala Tyr Thr Thr Ser Thr Thr Val Leu Ile | 485 | 490 | 495 |
| Gln Thr Thr Arg Val Pro Lys Gln Val Ala Val Pro Ala Thr Asp | 500 | 505 | 510 |
| Thr Thr Asp Lys Met Gln Thr Ser Leu Asp Glu Val Met Lys Thr | 515 | 520 | 525 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Thr | Lys | Ile | Ile | Ile | Gly | Cys | Phe | Val | Ala | Val | Thr | Leu | Leu | Ala | |
| | | | | 530 | | | | | 535 | | | | | 540 | |
| Ala | Ala | Met | Leu | Ile | Val | Phe | Tyr | Lys | Leu | Arg | Lys | Arg | His | Gln | |
| | | | | 545 | | | | | 550 | | | | | 555 | |
| Gln | Arg | Ser | Thr | Val | Thr | Ala | Ala | Arg | Thr | Val | Glu | Ile | Ile | Gln | |
| | | | | 560 | | | | | 565 | | | | | 570 | |
| Val | Asp | Glu | Asp | Ile | Pro | Ala | Ala | Thr | Ser | Ala | Ala | Ala | Thr | Ala | |
| | | | | 575 | | | | | 580 | | | | | 585 | |
| Ala | Pro | Ser | Gly | Val | Ser | Gly | Glu | Gly | Ala | Val | Val | Leu | Pro | Thr | |
| | | | | 590 | | | | | 595 | | | | | 600 | |
| Ile | His | Asp | His | Ile | Asn | Tyr | Asn | Thr | Tyr | Lys | Pro | Ala | His | Gly | |
| | | | | 605 | | | | | 610 | | | | | 615 | |
| Ala | His | Trp | Thr | Glu | Asn | Ser | Leu | Gly | Asn | Ser | Leu | His | Pro | Thr | |
| | | | | 620 | | | | | 625 | | | | | 630 | |
| Val | Thr | Thr | Ile | Ser | Glu | Pro | Tyr | Ile | Ile | Gln | Thr | His | Thr | Lys | |
| | | | | 635 | | | | | 640 | | | | | 645 | |
| Asp | Lys | Val | Gln | Glu | Thr | Gln | Ile | | | | | | | | |
| | | | | 650 | | | | | | | | | | | |

<210> 230
 <211> 2846
 <212> DNA
 <213> Homo sapiens

<400> 230
 cgctcgggca ccagccgcgg caaggatgga gctggggtgc tggacgcagt 50
 tggggctcac ttttcttcag ctccttctca tctcgtcctt gccaaagagag 100
 tacacagtca ttaatgaagc ctgccctgga gcagagtgga atatcatgtg 150
 tcgggagtgc tgtgaatatg atcagattga gtgcgtctgc cccggaaaga 200
 gggaagtcgt gggttatacc atcccttgct gcaggaatga ggagaatgag 250
 tgtgactcct gcctgatcca cccaggttgt accatctttg aaaactgcaa 300
 gagctgccga aatggctcat ggggggggtac cttggatgac ttctatgtga 350
 aggggttcta ctgtgcagag tgccgagcag gctggtacgg aggagactgc 400
 atgcgatgtg gccaggttct gcgagcccca aagggtcaga ttttgttgga 450
 aagctatccc ctaaagtctc actgtgaatg gaccattcat gctaaacctg 500
 ggtttgtcat ccaactaaga tttgtcatgt tgagtctgga gtttgactac 550
 atgtgccagt atgactatgt tgaggttcgt gatggagaca accgcgatgg 600

ccagatcatc aagcgtgtct gtggcaacga gcggccagct cctatccaga 650
gcataggatc ctactccac gtcctcttcc actccgatgg ctccaagaat 700
tttgacggtt tccatgccat ttatgaggag atcacagcat gctcctcatc 750
cccttgtttc catgacggca cgtgcgtcct tgacaaggct ggatcttaca 800
agtgtgcctg cttggcaggc tatactgggc agcgctgtga aaatctcctt 850
gaagaaagaa actgctcaga ccctgggggc ccagtcaatg ggtaccagaa 900
aataacaggg ggccctgggc ttatcaacgg acgccatgct aaaattggca 950
ccgtggtgtc tttcttttgt aacaactcct atgttcttag tggcaatgag 1000
aaaagaactt gccagcagaa tggagagtgg tcagggaaac agcccatctg 1050
cataaaagcc tgccgagaac caaagatttc agacctggtg agaaggagag 1100
ttcttccgat gcaggttcag tcaagggaga caccattaca ccagctatac 1150
tcagcggcct tcagcaagca gaaactgcag agtgccccta ccaagaagcc 1200
agcccttccc tttggagatc tgcccatggg ataccaacat ctgcataccc 1250
agctccagta tgagtgcac tcacccttct accgccgcct gggcagcagc 1300
aggaggacat gtctgaggac tgggaagtgg agtgggcggg caccatcctg 1350
catccctatc tgcgggaaaa ttgagaacat cactgctcca aagaccaag 1400
ggttgcgctg gccgtggcag gcagccatct acaggaggac cagcggggtg 1450
catgacggca gcctacacaa gggagcgtgg ttctagtct gcagcgggtg 1500
cctggtgaat gagcgactg tgggtggtggc tgccactgt gttactgacc 1550
tggggaaggt caccatgatc aagacagcag acctgaaagt tgttttgggg 1600
aaattctacc gggatgatga ccgggatgag aagaccatcc agagcctaca 1650
gatttctgct atcattctgc atcccaacta tgaccccatc ctgcttgatg 1700
ctgacatcgc catcctgaag ctctagaca aggcccgat cagcaccga 1750
gtccagccca tctgcctcgc tgccagtcgg gatctcagca cttccttcca 1800
ggagtccac atcactgtgg ctggctggaa tgtcctggca gacgtgagga 1850
gccctggctt caagaacgac aactgcgct ctgggggtgg cagtgtggtg 1900
gactcgctgc tgtgtgagga gcagcatgag gaccatggca tccagtgag 1950
tgtcactgat aacatgttct gtgccagctg ggaaccact gcccttctg 2000
atatctgcac tgcagagaca ggaggcatcg cggctgtgtc cttcccggga 2050

cgagcatctc ctgagccacg ctggcatctg atgggactgg tcagctggag 2100
 ctatgataaa acatgcagcc acaggctctc cactgccttc accaaggtgc 2150
 tgccttttaa agactggatt gaaagaaata tgaaatgaac catgctcatg 2200
 cactccttga gaagtgtttc tgtatatccg tctgtacgtg tgtcattgcg 2250
 tgaagcagtg tgggcctgaa gtgtgatttg gcctgtgaac ttggctgtgc 2300
 cagggtctct gacttcaggg acaaaactca gtgaagggtg agtagacctc 2350
 cattgctggt aggctgatgc cgcgtccact actaggacag ccaattggaa 2400
 gatgccaggg cttgcaagaa gtaagtttct tcaaagaaga ccatatacaa 2450
 aacctctcca ctccactgac ctggtggtct tccccaactt tcagttatac 2500
 gaatgccatc agcttgacca gggaagatct gggcttcatg aggccctttt 2550
 tgaggctctc aagttctaga gagctgcctg tgggacagcc cagggcagca 2600
 gagctgggat gtggtgcatg cctttgtgta catggccaca gtacagtctg 2650
 gtccttttcc ttcccatct cttgtacaca ttttaataaa ataagggttg 2700
 gcttctgaac tacaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2750
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2800
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa 2846

<210> 231
 <211> 720
 <212> PRT
 <213> Homo sapiens

<400> 231
 Met Glu Leu Gly Cys Trp Thr Gln Leu Gly Leu Thr Phe Leu Gln
 1 5 10 15
 Leu Leu Leu Ile Ser Ser Leu Pro Arg Glu Tyr Thr Val Ile Asn
 20 25 30
 Glu Ala Cys Pro Gly Ala Glu Trp Asn Ile Met Cys Arg Glu Cys
 35 40 45
 Cys Glu Tyr Asp Gln Ile Glu Cys Val Cys Pro Gly Lys Arg Glu
 50 55 60
 Val Val Gly Tyr Thr Ile Pro Cys Cys Arg Asn Glu Glu Asn Glu
 65 70 75
 Cys Asp Ser Cys Leu Ile His Pro Gly Cys Thr Ile Phe Glu Asn
 80 85 90

| | | | |
|---|-----|-----|-----|
| Cys Lys Ser Cys Arg Asn Gly Ser Trp Gly Gly Thr Leu Asp Asp | 95 | 100 | 105 |
| Phe Tyr Val Lys Gly Phe Tyr Cys Ala Glu Cys Arg Ala Gly Trp | 110 | 115 | 120 |
| Tyr Gly Gly Asp Cys Met Arg Cys Gly Gln Val Leu Arg Ala Pro | 125 | 130 | 135 |
| Lys Gly Gln Ile Leu Leu Glu Ser Tyr Pro Leu Asn Ala His Cys | 140 | 145 | 150 |
| Glu Trp Thr Ile His Ala Lys Pro Gly Phe Val Ile Gln Leu Arg | 155 | 160 | 165 |
| Phe Val Met Leu Ser Leu Glu Phe Asp Tyr Met Cys Gln Tyr Asp | 170 | 175 | 180 |
| Tyr Val Glu Val Arg Asp Gly Asp Asn Arg Asp Gly Gln Ile Ile | 185 | 190 | 195 |
| Lys Arg Val Cys Gly Asn Glu Arg Pro Ala Pro Ile Gln Ser Ile | 200 | 205 | 210 |
| Gly Ser Ser Leu His Val Leu Phe His Ser Asp Gly Ser Lys Asn | 215 | 220 | 225 |
| Phe Asp Gly Phe His Ala Ile Tyr Glu Glu Ile Thr Ala Cys Ser | 230 | 235 | 240 |
| Ser Ser Pro Cys Phe His Asp Gly Thr Cys Val Leu Asp Lys Ala | 245 | 250 | 255 |
| Gly Ser Tyr Lys Cys Ala Cys Leu Ala Gly Tyr Thr Gly Gln Arg | 260 | 265 | 270 |
| Cys Glu Asn Leu Leu Glu Glu Arg Asn Cys Ser Asp Pro Gly Gly | 275 | 280 | 285 |
| Pro Val Asn Gly Tyr Gln Lys Ile Thr Gly Gly Pro Gly Leu Ile | 290 | 295 | 300 |
| Asn Gly Arg His Ala Lys Ile Gly Thr Val Val Ser Phe Phe Cys | 305 | 310 | 315 |
| Asn Asn Ser Tyr Val Leu Ser Gly Asn Glu Lys Arg Thr Cys Gln | 320 | 325 | 330 |
| Gln Asn Gly Glu Trp Ser Gly Lys Gln Pro Ile Cys Ile Lys Ala | 335 | 340 | 345 |
| Cys Arg Glu Pro Lys Ile Ser Asp Leu Val Arg Arg Arg Val Leu | 350 | 355 | 360 |
| Pro Met Gln Val Gln Ser Arg Glu Thr Pro Leu His Gln Leu Tyr | 365 | 370 | 375 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Ala | Ala | Phe | Ser | Lys | Gln | Lys | Leu | Gln | Ser | Ala | Pro | Thr | Lys | 380 | 385 | 390 |
| Lys | Pro | Ala | Leu | Pro | Phe | Gly | Asp | Leu | Pro | Met | Gly | Tyr | Gln | His | 395 | 400 | 405 |
| Leu | His | Thr | Gln | Leu | Gln | Tyr | Glu | Cys | Ile | Ser | Pro | Phe | Tyr | Arg | 410 | 415 | 420 |
| Arg | Leu | Gly | Ser | Ser | Arg | Arg | Thr | Cys | Leu | Arg | Thr | Gly | Lys | Trp | 425 | 430 | 435 |
| Ser | Gly | Arg | Ala | Pro | Ser | Cys | Ile | Pro | Ile | Cys | Gly | Lys | Ile | Glu | 440 | 445 | 450 |
| Asn | Ile | Thr | Ala | Pro | Lys | Thr | Gln | Gly | Leu | Arg | Trp | Pro | Trp | Gln | 455 | 460 | 465 |
| Ala | Ala | Ile | Tyr | Arg | Arg | Thr | Ser | Gly | Val | His | Asp | Gly | Ser | Leu | 470 | 475 | 480 |
| His | Lys | Gly | Ala | Trp | Phe | Leu | Val | Cys | Ser | Gly | Ala | Leu | Val | Asn | 485 | 490 | 495 |
| Glu | Arg | Thr | Val | Val | Val | Ala | Ala | His | Cys | Val | Thr | Asp | Leu | Gly | 500 | 505 | 510 |
| Lys | Val | Thr | Met | Ile | Lys | Thr | Ala | Asp | Leu | Lys | Val | Val | Leu | Gly | 515 | 520 | 525 |
| Lys | Phe | Tyr | Arg | Asp | Asp | Asp | Arg | Asp | Glu | Lys | Thr | Ile | Gln | Ser | 530 | 535 | 540 |
| Leu | Gln | Ile | Ser | Ala | Ile | Ile | Leu | His | Pro | Asn | Tyr | Asp | Pro | Ile | 545 | 550 | 555 |
| Leu | Leu | Asp | Ala | Asp | Ile | Ala | Ile | Leu | Lys | Leu | Leu | Asp | Lys | Ala | 560 | 565 | 570 |
| Arg | Ile | Ser | Thr | Arg | Val | Gln | Pro | Ile | Cys | Leu | Ala | Ala | Ser | Arg | 575 | 580 | 585 |
| Asp | Leu | Ser | Thr | Ser | Phe | Gln | Glu | Ser | His | Ile | Thr | Val | Ala | Gly | 590 | 595 | 600 |
| Trp | Asn | Val | Leu | Ala | Asp | Val | Arg | Ser | Pro | Gly | Phe | Lys | Asn | Asp | 605 | 610 | 615 |
| Thr | Leu | Arg | Ser | Gly | Val | Val | Ser | Val | Val | Asp | Ser | Leu | Leu | Cys | 620 | 625 | 630 |
| Glu | Glu | Gln | His | Glu | Asp | His | Gly | Ile | Pro | Val | Ser | Val | Thr | Asp | 635 | 640 | 645 |
| Asn | Met | Phe | Cys | Ala | Ser | Trp | Glu | Pro | Thr | Ala | Pro | Ser | Asp | Ile | 650 | 655 | 660 |

Cys Thr Ala Glu Thr Gly Gly Ile Ala Ala Val Ser Phe Pro Gly
665 670 675

Arg Ala Ser Pro Glu Pro Arg Trp His Leu Met Gly Leu Val Ser
680 685 690

Trp Ser Tyr Asp Lys Thr Cys Ser His Arg Leu Ser Thr Ala Phe
695 700 705

Thr Lys Val Leu Pro Phe Lys Asp Trp Ile Glu Arg Asn Met Lys
710 715 720

<210> 232

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 232

aggttcgtga tggagacaac cgcg 24

<210> 233

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 233

tgtcaaggac gcaactgccgt catg 24

<210> 234

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 234

tggccagatc atcaagcgtg tctgtggcaa cgagcggcca gtcctatcc 50

<210> 235

<211> 1964

<212> DNA

<213> Homo sapiens

<400> 235

accaggcatt gtatcttcag ttgtcatcaa gttcgcaatc agattggaaa 50

agctcaactt gaagctttct tgctgcagt gaagcagaga gatagatatt 100

attcacgtaa taaaaaacat gggcttcaac ctgactttcc acctttccta 150

caaattccga ttactgttgc tgttgacttt gtgcctgaca gtggttgggt 200
gggccaccag taactacttc gtgggtgcca ttcaagagat tcctaaagca 250
aaggagtcca tggctaattt ccataagacc ctcattttgg ggaagggaaa 300
aactctgact aatgaagcat ccacgaagaa ggtagaactt gacaactgtc 350
cttctgtgtc tccttacctc agaggccaga gcaagctcat tttcaaacca 400
gatctcactt tggaagaggt acaggcagaa aatcccaaag tgtccagagg 450
ccggtatcgc cctcaggaat gttaaagcttt acagaggggt gccatcctcg 500
ttccccaccg gaacagagag aaacacctga tgtacctgct ggaacatctg 550
catcccttcc tgcagaggca gcagctggat tatggcatct acgtcatcca 600
ccaggctgaa ggtaaaaagt ttaatcgagc caaactcttg aatgtgggct 650
atctagaagc cctcaaggaa gaaaattggg actgctttat attccacgat 700
gtggacctgg tacccgagaa tgactttaac ctttacaagt gtgaggagca 750
tcccaagcat ctggtggttg gcaggaacag cactgggtac aggttacgtt 800
acagtggata ttttgggggt gttactgccc taagcagaga gcagtttttc 850
aaggtgaatg gattctctaa caactactgg ggatggggag gcgaagacga 900
tgacctcaga ctcagggttg agctccaaag aatgaaaatt tcccggcccc 950
tgctgaagt gggtaaatat acaatggtct tccacactag agacaaaggc 1000
aatgaggtga acgcagaacg gatgaagctc ttacaccaag tgtcacgagt 1050
ctggagaaca gatgggttga gtagttgttc ttataaatta gtatctgtgg 1100
aacacaatcc tttatatatc aacatcacag tggatttctg gtttggtgca 1150
tgaccctgga tcttttggtg atgtttggaa gaactgattc tttgtttgca 1200
ataattttgg cctagagact tcaaatagta gcacacatta agaacctgtt 1250
acagctcatt gttgagctga atttttcctt tttgtatttt cttagcagag 1300
ctcctggtga tgtagagtat aaaacagttg taacaagaca gctttcttag 1350
tcattttgat catgagggtt aaatattgta atatggatac ttgaaggact 1400
ttatataaaa ggatgactca aaggataaaa tgaacgctat ttgaggactc 1450
tggttgaagg agatttattt aaatttgaag taatatatta tgggataaaa 1500
ggccacagga aataagactg ctgaatgtct gagagaacca gagttgttct 1550
cgtccaaggt agaaaggtag gaagatacaa tactgttatt catttatcct 1600

gtacaatcat ctgtgaagtg gtggtgtcag gtgagaaggc gtccacaaaa 1650
 gaggggagaa aaggcgacga atcaggacac agtgaacttg ggaatgaaga 1700
 ggtagcagga ggggtggagtg tcggctgcaa aggcagcagt agctgagctg 1750
 gttgcagggtg ctgatagcct tcaggggagg acctgcccag gtatgccttc 1800
 cagtgatgcc caccagagaa tacattctct attagttttt aaagagtttt 1850
 tgtaaaatga ttttgtacaa gtaggatatg aattagcagt ttacaagttt 1900
 acatattaac taataataaa tatgtctatc aaatacctct gtagtaaaat 1950
 gtgaaaaagc aaaa 1964

<210> 236

<211> 344

<212> PRT

<213> Homo sapiens

<220>

<221> Signal peptide

<222> 1-27

<223> Signal peptide

<220>

<221> N-glycosylation sites

<222> 4-7, 220-223, 335-338

<223> N-glycosylation sites

<220>

<221> Xylose isomerase proteins

<222> 191-201

<223> Xylose isomerase proteins

<400> 236

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Phe | Asn | Leu | Thr | Phe | His | Leu | Ser | Tyr | Lys | Phe | Arg | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Leu | Leu | Leu | Thr | Leu | Cys | Leu | Thr | Val | Val | Gly | Trp | Ala | Thr |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ser | Asn | Tyr | Phe | Val | Gly | Ala | Ile | Gln | Glu | Ile | Pro | Lys | Ala | Lys |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Glu | Phe | Met | Ala | Asn | Phe | His | Lys | Thr | Leu | Ile | Leu | Gly | Lys | Gly |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Lys | Thr | Leu | Thr | Asn | Glu | Ala | Ser | Thr | Lys | Lys | Val | Glu | Leu | Asp |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Asn | Cys | Pro | Ser | Val | Ser | Pro | Tyr | Leu | Arg | Gly | Gln | Ser | Lys | Leu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ile | Phe | Lys | Pro | Asp | Leu | Thr | Leu | Glu | Glu | Val | Gln | Ala | Glu | Asn |

| | 95 | 100 | 105 |
|-----------------|---------------------|-------------------------|-----|
| Pro Lys Val Ser | Arg Gly Arg Tyr Arg | Pro Gln Glu Cys Lys Ala | |
| | 110 | 115 | 120 |
| Leu Gln Arg Val | Ala Ile Leu Val Pro | His Arg Asn Arg Glu Lys | |
| | 125 | 130 | 135 |
| His Leu Met Tyr | Leu Leu Glu His Leu | His Pro Phe Leu Gln Arg | |
| | 140 | 145 | 150 |
| Gln Gln Leu Asp | Tyr Gly Ile Tyr Val | Ile His Gln Ala Glu Gly | |
| | 155 | 160 | 165 |
| Lys Lys Phe Asn | Arg Ala Lys Leu Leu | Asn Val Gly Tyr Leu Glu | |
| | 170 | 175 | 180 |
| Ala Leu Lys Glu | Glu Asn Trp Asp Cys | Phe Ile Phe His Asp Val | |
| | 185 | 190 | 195 |
| Asp Leu Val Pro | Glu Asn Asp Phe Asn | Leu Tyr Lys Cys Glu Glu | |
| | 200 | 205 | 210 |
| His Pro Lys His | Leu Val Val Gly Arg | Asn Ser Thr Gly Tyr Arg | |
| | 215 | 220 | 225 |
| Leu Arg Tyr Ser | Gly Tyr Phe Gly Gly | Val Thr Ala Leu Ser Arg | |
| | 230 | 235 | 240 |
| Glu Gln Phe Phe | Lys Val Asn Gly Phe | Ser Asn Asn Tyr Trp Gly | |
| | 245 | 250 | 255 |
| Trp Gly Gly Glu | Asp Asp Asp Leu Arg | Leu Arg Val Glu Leu Gln | |
| | 260 | 265 | 270 |
| Arg Met Lys Ile | Ser Arg Pro Leu Pro | Glu Val Gly Lys Tyr Thr | |
| | 275 | 280 | 285 |
| Met Val Phe His | Thr Arg Asp Lys Gly | Asn Glu Val Asn Ala Glu | |
| | 290 | 295 | 300 |
| Arg Met Lys Leu | Leu His Gln Val Ser | Arg Val Trp Arg Thr Asp | |
| | 305 | 310 | 315 |
| Gly Leu Ser Ser | Cys Ser Tyr Lys Leu | Val Ser Val Glu His Asn | |
| | 320 | 325 | 330 |
| Pro Leu Tyr Ile | Asn Ile Thr Val Asp | Phe Trp Phe Gly Ala | |
| | 335 | 340 | |

<210> 237

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 237
 ccttacctca gaggccagag caagc 25

<210> 238
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 238
 gagcttcacg cgttctgcgt tcacc 25

<210> 239
 <211> 46
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 239
 caggaatgta aagctttaca gagggtcgcc atcctcggtc cccacc 46

<210> 240
 <211> 2567
 <212> DNA
 <213> Homo sapiens

<400> 240
 cgtgggcccgg ggtcgcgcag cgggctgtgg gcgcgcccgg aggagcgacc 50
 gccgcagttc tcgagctcca gctgcattcc ctccgcgtcc gcccacgct 100
 tctcccgtc cgggccccgc aatggcccag gcagtgtggt cgcgcctcgg 150
 ccgcaccttc tggcttgctt gcctcctgcc ctgggccccg gcaggggtgg 200
 ccgcaggcct gtatgaactc aatctcacca ccgatagccc tgccaccacg 250
 ggagcgggtg tgaccatctc ggccagcctg gtggccaagg acaacggcag 300
 cctggccttg cccgctgacg cccacctcta ccgcttcac tggtatccaca 350
 ccccgtggt gcttactggc aagatggaga agggctctcag ctccaccatc 400
 cgtgtggtcg gccacgtgcc cggggaattc ccggtctctg tctgggtcac 450
 tgccgctgac tgctggatgt gccagcctgt ggccaggggc tttgtggtcc 500
 tccccatcac agagtctctc gtgggggacc ttgttgtcac ccagaacact 550
 tccctaccct ggcccagctc ctatctcact aagaccgtcc tgaaagtctc 600
 cttcctctc cagacccga gcaacttct caagaccgcc ttgtttctct 650

acagctggga cttcggggac gggacccaga tggtgactga agactccgtg 700
gtctattata actattccat catcgggacc ttcaccgtga agctcaaagt 750
ggtggcggag tgggaagagg tggagccgga tgccacgagg gctgtgaagc 800
agaagaccgg ggacttctcc gcctcgctga agctgcagga aacccttcga 850
ggcatccaag tggtggggcc caccctaatt cagaccttcc aaaagatgac 900
cgtgaccttg aacttcctgg ggagccctcc tctgactgtg tgctggcgtc 950
tcaagcctga gtgcctcccg ctggaggaag gggagtgcc aacctgtgtcc 1000
gtggccagca cagcgtacaa cctgaccac accttcaggg accctgggga 1050
ctactgcttc agcatccggg ccgagaatat catcagcaag acacatcagt 1100
accacaagat ccagggtgtg ccctccagaa tccagccggc tgtctttgct 1150
ttcccatgtg ctacacttat cactgtgatg ttggccttca tcatgtacat 1200
gaccctgcgg aatgccactc agcaaaagga catggtggag aaccgggagc 1250
caccctctgg ggtcagggtg tgctgccaga tgtgctgtgg gcctttcttg 1300
ctggagactc catctgagta cctggaaatt gttcgtgaga accacgggct 1350
gctcccgccc ctctataagt ctgtcaaac ttacaccgtg tgagcactcc 1400
ccctccccac cccatctcag tgttaactga ctgctgactt ggagtttcca 1450
gcagggtggt gtgcaccact gaccaggagg ggttcatttg cgtggggctg 1500
ttggcctgga tcatccatcc atctgtacag ttcagccact gccacaagcc 1550
cctccctctc tgtcaccctt gacccagcc attcaccat ctgtacagtc 1600
cagccactga cataagcccc actcggttac cacccttg accccctacc 1650
tttgaagagg cttcgtgcag gactttgatg cttggggtgt tccgtgttga 1700
ctcctaggtg ggcttggtg cccactgccc attcctctca tattggcaca 1750
tctgctgtcc attgggggtt ctgagtttcc tccccagac agccctacct 1800
gtgccagaga gctagaaaga aggtcataaa gggttaaaaa tccataacta 1850
aaggttgtac acatagatgg gcacactcac agagagaagt gtgcatgtac 1900
acacaccaca cacacacaca cacacacaca cacagaaata taaacacatg 1950
cgtcacatgg gcatttcaga tgatcagctc tgtatctggt taagtcgggt 2000
gctgggatgc accctgcact agagctgaaa ggaaatttga cctccaagca 2050

gccctgacag gttctgggcc cgggccctcc ctttgtgctt tgtctctgca 2100
 gttcttgccg cctttataag gccatcctag tccctgctgg ctggcagggg 2150
 cctggatggg gggcaggact aatactgagt gattgcagag tgctttataa 2200
 atatcacctt attttatcga aacccatctg tgaaactttc actgaggaaa 2250
 aggccttgca gcggtagaag aggttgagtc aaggccgggc gcggtggctc 2300
 acgcctgtaa tcccagcact ttgggaggcc gaggcgggtg gatcacgaga 2350
 tcaggagatc gagaccaccc tggctaacac ggtgaaaccc cgtctctact 2400
 aaaaaaatac aaaaagttag cggggcgtgg tgggtgggtgc ctgtagtccc 2450
 agctactcgg gaggctgagg caggagaatg gtgcgaaccc gggaggcgga 2500
 gcttgcaagt agcccagatg gcgccactgc actccagcct gagtgacaga 2550
 gcgagactct gtctcca 2567

<210> 241
 <211> 423
 <212> PRT
 <213> Homo sapiens

<400> 241
 Met Ala Gln Ala Val Trp Ser Arg Leu Gly Arg Ile Leu Trp Leu
 1 5 10 15
 Ala Cys Leu Leu Pro Trp Ala Pro Ala Gly Val Ala Ala Gly Leu
 20 25 30
 Tyr Glu Leu Asn Leu Thr Thr Asp Ser Pro Ala Thr Thr Gly Ala
 35 40 45
 Val Val Thr Ile Ser Ala Ser Leu Val Ala Lys Asp Asn Gly Ser
 50 55 60
 Leu Ala Leu Pro Ala Asp Ala His Leu Tyr Arg Phe His Trp Ile
 65 70 75
 His Thr Pro Leu Val Leu Thr Gly Lys Met Glu Lys Gly Leu Ser
 80 85 90
 Ser Thr Ile Arg Val Val Gly His Val Pro Gly Glu Phe Pro Val
 95 100 105
 Ser Val Trp Val Thr Ala Ala Asp Cys Trp Met Cys Gln Pro Val
 110 115 120
 Ala Arg Gly Phe Val Val Leu Pro Ile Thr Glu Phe Leu Val Gly
 125 130 135
 Asp Leu Val Val Thr Gln Asn Thr Ser Leu Pro Trp Pro Ser Ser
 140 145 150

[illegible]

<210> 242
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 242
catttcctta ccctggaccc agctcc 26

<210> 243
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 243
gaaaggccca cagcacatct ggcag 25

<210> 244
<211> 46
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 244
ccacgaccg agcaacttcc tcaagaccga cttgtttctc tacagc 46

<210> 245
<211> 485
<212> DNA
<213> Homo sapiens

<400> 245
gctcaagacc cagcagtggg acagccagac agacggcacg atggcactga 50

gctcccagat ctggggccgct tgcctcctgc tcctcctcct cctcgccagc 100

ctgaccagtg gctctgtttt cccacaacag acgggacaac ttgcagagct 150

gcaaccccag gacagagctg gagccagggc cagctggatg cccatgttcc 200

agaggcgaag gaggcgagac acccacttcc ccatctgcat tttctgctgc 250

ggctgctgtc atcgatcaaa gtgtgggatg tgctgcaaga cgtagaacct 300

acctgccctg ccccgctccc ctcccttcct tattttattcc tgctgcecca 350

gaacataggt cttggaataa aatggctggt tcttttgttt tccaaaaaaa 400

aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 450

aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaa 485

<210> 246

<211> 84

<212> PRT

<213> Homo sapiens

<400> 246

Met Ala Leu Ser Ser Gln Ile Trp Ala Ala Cys Leu Leu Leu Leu
1 5 10 15

Leu Leu Leu Ala Ser Leu Thr Ser Gly Ser Val Phe Pro Gln Gln
20 25 30

Thr Gly Gln Leu Ala Glu Leu Gln Pro Gln Asp Arg Ala Gly Ala
35 40 45

Arg Ala Ser Trp Met Pro Met Phe Gln Arg Arg Arg Arg Arg Asp
50 55 60

Thr His Phe Pro Ile Cys Ile Phe Cys Cys Gly Cys Cys His Arg
65 70 75

Ser Lys Cys Gly Met Cys Cys Lys Thr
80

<210> 247

<211> 2359

<212> DNA

<213> Homo sapiens

<400> 247

ctgtcaggaa ggaccatctg aaggctgcaa tttgttctta gggaggcagg 50

tgctggcctg gcctggatct tccaccatgt tctgttgct gccttttgat 100

agcctgattg tcaaccttct ggccatctcc ctgactgtcc tcttcaccct 150

ccttctcggt ttcacatag tgccagccat ttttgagtc tcctttggta 200

tccgcaaact ctacatgaaa agtctgttaa aaatctttgc gtgggctacc 250

ttgagaatgg agcgaggagc caaggagaag aaccaccagc tttacaagcc 300

ctacaccaac ggaatcattg caaaggatcc cacttcacta gaagaagaga 350

tcaaagagat tcgtcgaagt ggtagtagta aggctctgga caaactcca 400

gagttcgagc tctctgacat tttctacttt tgccggaaag gaatggagac 450

cattatggat gatgaggatg caaagagatt ctgagcagaa gaactggagt 500

cctggaacct gctgagcaga accaattata acttcagta catcagcctt 550

cggtcacgg tcctgtgggg gtaggagtg ctgattcggt actgctttct 600

gctgccgctc aggatagcac tggctttcac agggattagc cttctggtgg 650
tgggcacaac tgtggtggga tacttgccaa atgggaggtt taaggaattc 700
atgagtaaac atgttcactt aatgtgttac cggatctgcg tgcgagcgct 750
gacagccatc atcacctacc atgacaggga aaacagacca agaaatggtg 800
gcatctgtgt ggccaatcat acctcacgga tcgatgtgat catcttggcc 850
agcgatggct attatgccat ggtgggtcaa gtgcacgggg gactcatggg 900
tgtgattcag agagccatgg tgaaggcctg cccacacgtc tggtttgagc 950
gctcggaagt gaaggatcgc cacctggtgg ctaagagact gactgaacat 1000
gtgcaagata aaagcaagct gcctatcctc atcttcccag aaggaacctg 1050
catcaataat acatcgggtga tgatgttcaa aaagggaggt tttgaaattg 1100
gagccacagt ttaccctgtt gctatcaagt atgaccctca atttggcgat 1150
gccttctgga acagcagcaa atacgggatg gtgacgtacc tgctgcgaat 1200
gatgaccagc tggggcattg tctgcagcgt gtggtacctg cctcccatga 1250
ctagagaggc agatgaagat gctgtccagt ttgcgaatag ggtgaaatct 1300
gccattgcca ggcagggagg acttgtggac ctgctgtggg atgggggcct 1350
gaagagggag aaggtgaagg acacgttcaa ggaggagcag cagaagctgt 1400
acagcaagat gatcgtgggg aaccacaagg acaggagccg ctccctgagcc 1450
tgctccagc tggctggggc caccgtgcgg ggtgccaacg ggctcagagc 1500
tggagttgcc gccgccgcc cactgctgt gtcccttcca gactccaggg 1550
ctccccgggc tgctctggat cccaggactc cggctttcgc cgagccgcag 1600
cgggatccct gtgcaccg cgagcctac ccttgggtgt ctaaacggat 1650
gctgctgggt gttgcgacc aggacgagat gccttgtttc tttacaata 1700
agtcgttga ggaatgccat taaagtgaac tccccacctt tgcacgctgt 1750
gcgggctgag tggttgggga gatgtggcca tggctctgtg ctagagatgg 1800
cggtaacaaga gtctgttatg caagcccgtg tgccagggat gtgctggggg 1850
cggccacccg ctctccagga aaggcacagc tgaggcactg tggctggctt 1900
cggcctcaac atcgccccca gccttgagc tctgcagaca tgataggaag 1950
gaaactgtca tctgcagggg ctttcagcaa aatgaagggt tagattttta 2000
tgctgctgct gatgggggta ctaaaggag gggagaggc caggtgggcc 2050

gctgactggg ccatggggag aacgtgtgtt cgtactccag gctaaccctg 2100
aactcccat gtgatgcgcg ctttgttgaa tgtgtgtctc ggtttcccca 2150
tctgtaatat gagtcggggg gaatggtggt gattcctacc tcacagggct 2200
gttgtgggga ttaaagtgct gcgggtgagt gaaggacaca tcacgttcag 2250
tgtttcaagt acaggcccac aaaacggggc acggcaggcc tgagctcaga 2300
gctgctgcac tgggctttgg atttgttctt gtgagtaaataaaaactggct 2350
ggtgaatga 2359

<210> 248

<211> 456

<212> PRT

<213> Homo sapiens

<400> 248

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Phe | Leu | Leu | Leu | Pro | Phe | Asp | Ser | Leu | Ile | Val | Asn | Leu | Leu | 1 | 5 | 10 | 15 |
| Gly | Ile | Ser | Leu | Thr | Val | Leu | Phe | Thr | Leu | Leu | Val | Phe | Ile | | 20 | 25 | 30 | |
| Ile | Val | Pro | Ala | Ile | Phe | Gly | Val | Ser | Phe | Gly | Ile | Arg | Lys | Leu | 35 | 40 | 45 | |
| Tyr | Met | Lys | Ser | Leu | Leu | Lys | Ile | Phe | Ala | Trp | Ala | Thr | Leu | Arg | 50 | 55 | 60 | |
| Met | Glu | Arg | Gly | Ala | Lys | Glu | Lys | Asn | His | Gln | Leu | Tyr | Lys | Pro | 65 | 70 | 75 | |
| Tyr | Thr | Asn | Gly | Ile | Ile | Ala | Lys | Asp | Pro | Thr | Ser | Leu | Glu | Glu | 80 | 85 | 90 | |
| Glu | Ile | Lys | Glu | Ile | Arg | Arg | Ser | Gly | Ser | Ser | Lys | Ala | Leu | Asp | 95 | 100 | 105 | |
| Asn | Thr | Pro | Glu | Phe | Glu | Leu | Ser | Asp | Ile | Phe | Tyr | Phe | Cys | Arg | 110 | 115 | 120 | |
| Lys | Gly | Met | Glu | Thr | Ile | Met | Asp | Asp | Glu | Val | Thr | Lys | Arg | Phe | 125 | 130 | 135 | |
| Ser | Ala | Glu | Glu | Leu | Glu | Ser | Trp | Asn | Leu | Leu | Ser | Arg | Thr | Asn | 140 | 145 | 150 | |
| Tyr | Asn | Phe | Gln | Tyr | Ile | Ser | Leu | Arg | Leu | Thr | Val | Leu | Trp | Gly | 155 | 160 | 165 | |
| Leu | Gly | Val | Leu | Ile | Arg | Tyr | Cys | Phe | Leu | Leu | Pro | Leu | Arg | Ile | 170 | 175 | 180 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Leu | Ala | Phe | Thr | Gly | Ile | Ser | Leu | Leu | Val | Val | Gly | Thr | Thr | 185 | 190 | 195 |
| Val | Val | Gly | Tyr | Leu | Pro | Asn | Gly | Arg | Phe | Lys | Glu | Phe | Met | Ser | 200 | 205 | 210 |
| Lys | His | Val | His | Leu | Met | Cys | Tyr | Arg | Ile | Cys | Val | Arg | Ala | Leu | 215 | 220 | 225 |
| Thr | Ala | Ile | Ile | Thr | Tyr | His | Asp | Arg | Glu | Asn | Arg | Pro | Arg | Asn | 230 | 235 | 240 |
| Gly | Gly | Ile | Cys | Val | Ala | Asn | His | Thr | Ser | Pro | Ile | Asp | Val | Ile | 245 | 250 | 255 |
| Ile | Leu | Ala | Ser | Asp | Gly | Tyr | Tyr | Ala | Met | Val | Gly | Gln | Val | His | 260 | 265 | 270 |
| Gly | Gly | Leu | Met | Gly | Val | Ile | Gln | Arg | Ala | Met | Val | Lys | Ala | Cys | 275 | 280 | 285 |
| Pro | His | Val | Trp | Phe | Glu | Arg | Ser | Glu | Val | Lys | Asp | Arg | His | Leu | 290 | 295 | 300 |
| Val | Ala | Lys | Arg | Leu | Thr | Glu | His | Val | Gln | Asp | Lys | Ser | Lys | Leu | 305 | 310 | 315 |
| Pro | Ile | Leu | Ile | Phe | Pro | Glu | Gly | Thr | Cys | Ile | Asn | Asn | Thr | Ser | 320 | 325 | 330 |
| Val | Met | Met | Phe | Lys | Lys | Gly | Ser | Phe | Glu | Ile | Gly | Ala | Thr | Val | 335 | 340 | 345 |
| Tyr | Pro | Val | Ala | Ile | Lys | Tyr | Asp | Pro | Gln | Phe | Gly | Asp | Ala | Phe | 350 | 355 | 360 |
| Trp | Asn | Ser | Ser | Lys | Tyr | Gly | Met | Val | Thr | Tyr | Leu | Leu | Arg | Met | 365 | 370 | 375 |
| Met | Thr | Ser | Trp | Ala | Ile | Val | Cys | Ser | Val | Trp | Tyr | Leu | Pro | Pro | 380 | 385 | 390 |
| Met | Thr | Arg | Glu | Ala | Asp | Glu | Asp | Ala | Val | Gln | Phe | Ala | Asn | Arg | 395 | 400 | 405 |
| Val | Lys | Ser | Ala | Ile | Ala | Arg | Gln | Gly | Gly | Leu | Val | Asp | Leu | Leu | 410 | 415 | 420 |
| Trp | Asp | Gly | Gly | Leu | Lys | Arg | Glu | Lys | Val | Lys | Asp | Thr | Phe | Lys | 425 | 430 | 435 |
| Glu | Glu | Gln | Gln | Lys | Leu | Tyr | Ser | Lys | Met | Ile | Val | Gly | Asn | His | 440 | 445 | 450 |
| Lys | Asp | Arg | Ser | Arg | Ser | | | | | | | | | | 455 | | |

<210> 249
<211> 1103
<212> DNA
<213> Homo sapiens

<400> 249
gcccctcgaa accaggactc cagcacctct ggtcccgcgc tcacccggac 50
ccctggccct cactgtctct ccagggatgg cgctggcggc ttgatgatc 100
gcccctcggca gcctcggcct ccacacctgg caggcccagg ctgttcccac 150
catcctgccc ctgggcctgg ctccagacac ctttgacgat acctatgtgg 200
gttgtgcaga ggagatggag gagaaggcag cccccctgct aaaggaggaa 250
atggcccacc atgccttgcg gcgggaatcc tgggaggcag cccaggagac 300
ctgggaggac aagcgtcgag ggcttacctt gccccctggc ttcaaagccc 350
agaatggaat agccattatg gtctacacca actcatcgaa caccttgtac 400
tgggagttga atcaggccgt gcggacgggc ggaggctccc gggagctcta 450
catgaggcac tttcccttca aggccctgca tttctacctg atccgggccc 500
tgcagctgct gcgaggcagt gggggctgca gcaggggacc tggggaggtg 550
gtgttccgag gtgtgggcag ccttcgcttt gaaccaaga ggctggggga 600
ctctgtccgc ttgggccagt ttgcctccag ctccctggat aaggcagtgg 650
cccacagatt tggggagaag aggcggggct gtgtgtctgc gccaggggtg 700
cagctagggt cacaatctga gggggcctcc tctctgcccc cctggaagac 750
tctgctcttg gcccctggag agttccagct ctcaggggtt gggccctgaa 800
agtccaacat ctgccactta ggagccctgg gaacgggtga ccttcatatg 850
acgaagaggc acctccagca gccttgagaa gcaagaacat ggttccggac 900
ccagccctag cagccttctc cccaaccagg atgttggcct ggggaggcca 950
cagcagggtt gagggaaact tgctatgtga tggggacttc ctgggacaag 1000
caaggaaagt actgaggcag ccacttgatt gaacggtgtt gcaatgtgga 1050
gacatggagt tttattgagg tagctacgtg attaaatggt attgcagtgt 1100
gga 1103

<210> 250
<211> 240
<212> PRT
<213> Homo sapiens

<400> 250

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Ala | Leu | Ala | Ala | Leu | Met | Ile | Ala | Leu | Gly | Ser | Leu | Gly | Leu | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| His | Thr | Trp | Gln | Ala | Gln | Ala | Val | Pro | Thr | Ile | Leu | Pro | Leu | Gly | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Leu | Ala | Pro | Asp | Thr | Phe | Asp | Asp | Thr | Tyr | Val | Gly | Cys | Ala | Glu | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Glu | Met | Glu | Glu | Lys | Ala | Ala | Pro | Leu | Leu | Lys | Glu | Glu | Met | Ala | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| His | His | Ala | Leu | Leu | Arg | Glu | Ser | Trp | Glu | Ala | Ala | Gln | Glu | Thr | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Trp | Glu | Asp | Lys | Arg | Arg | Gly | Leu | Thr | Leu | Pro | Pro | Gly | Phe | Lys | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Ala | Gln | Asn | Gly | Ile | Ala | Ile | Met | Val | Tyr | Thr | Asn | Ser | Ser | Asn | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Thr | Leu | Tyr | Trp | Glu | Leu | Asn | Gln | Ala | Val | Arg | Thr | Gly | Gly | Gly | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Ser | Arg | Glu | Leu | Tyr | Met | Arg | His | Phe | Pro | Phe | Lys | Ala | Leu | His | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Phe | Tyr | Leu | Ile | Arg | Ala | Leu | Gln | Leu | Leu | Arg | Gly | Ser | Gly | Gly | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Cys | Ser | Arg | Gly | Pro | Gly | Glu | Val | Val | Phe | Arg | Gly | Val | Gly | Ser | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Leu | Arg | Phe | Glu | Pro | Lys | Arg | Leu | Gly | Asp | Ser | Val | Arg | Leu | Gly | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Gln | Phe | Ala | Ser | Ser | Ser | Leu | Asp | Lys | Ala | Val | Ala | His | Arg | Phe | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Gly | Glu | Lys | Arg | Arg | Gly | Cys | Val | Ser | Ala | Pro | Gly | Val | Gln | Leu | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Gly | Ser | Gln | Ser | Glu | Gly | Ala | Ser | Ser | Leu | Pro | Pro | Trp | Lys | Thr | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Leu | Leu | Leu | Ala | Pro | Gly | Glu | Phe | Gln | Leu | Ser | Gly | Val | Gly | Pro | |
| | | | | 230 | | | | | 235 | | | | | 240 | |

<210> 251

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 251
ccaccacctg gaggtcctgc agttgggcag gaactccatc cggcagattg 50

<210> 252
<211> 1076
<212> DNA
<213> Homo sapiens

<400> 252
gtggcttcat ttcagtggct gacttccaga gagcaatatg gctgggtccc 50
caacatgcct caccctcatc tatatccttt ggcagctcac agggtcagca 100
gcctctggac ccgtgaaaga gctggtcggt tccgttgggtg gggccgtgac 150
tttccccctg aagtccaaag taaagcaagt tgactctatt gtctggacct 200
tcaacacaac ccctcttgct accatacagc cagaaggggg cactatcata 250
gtgacccaaa atcgtaatag ggagagagta gacttcccag atggaggcta 300
ctccctgaag ctccagcaaac tgaagaagaa tgactcaggg atctactatg 350
tggggatata cagctcatca ctccagcagc cctccacca ggagtacgtg 400
ctgcatgtct acgagcacct gtcaaagcct aaagtcacca tgggtctgca 450
gagcaataag aatggcacct gtgtgaccaa tctgacatgc tgcattggaac 500
atggggaaga ggatgtgatt tatacctgga aggccctggg gcaagcagcc 550
aatgagtccc ataatgggtc catcctcccc atctcctgga gatggggaga 600
aagtgatatg accttcatct gcgttgccag gaaccctgtc agcagaaact 650
tctcaagccc catccttgcc aggaagctct gtgaagggtc tgctgatgac 700
ccagattcct ccatggctct cctgtgtctc ctgttgggtc ccctcctgct 750
cagtctcttt gtactggggc tatttctttg gtttctgaag agagagagac 800
aagaagagta cattgaagag aagaagagag tggacatttg tcgggaaact 850
cctaacatat gccccattc tggagagaac acagagtacg acacaatccc 900
tcacactaat agaacaatcc taaaggaaga tccagcaaatt acggtttact 950
ccactgtgga aataccgaaa aagatggaaa atccccactc actgctcacg 1000
atgccagaca caccaaggct atttgccctat gagaatgtta tctagacagc 1050
agtgcactcc cctaagtctc tgctca 1076

<210> 253
<211> 335
<212> PRT
<213> Homo sapiens

<400> 253

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Gly | Ser | Pro | Thr | Cys | Leu | Thr | Leu | Ile | Tyr | Ile | Leu | Trp |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Gln | Leu | Thr | Gly | Ser | Ala | Ala | Ser | Gly | Pro | Val | Lys | Glu | Leu | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Gly | Ser | Val | Gly | Gly | Ala | Val | Thr | Phe | Pro | Leu | Lys | Ser | Lys | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Lys | Gln | Val | Asp | Ser | Ile | Val | Trp | Thr | Phe | Asn | Thr | Thr | Pro | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Val | Thr | Ile | Gln | Pro | Glu | Gly | Gly | Thr | Ile | Ile | Val | Thr | Gln | Asn |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Arg | Asn | Arg | Glu | Arg | Val | Asp | Phe | Pro | Asp | Gly | Gly | Tyr | Ser | Leu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Lys | Leu | Ser | Lys | Leu | Lys | Lys | Asn | Asp | Ser | Gly | Ile | Tyr | Tyr | Val |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Gly | Ile | Tyr | Ser | Ser | Ser | Leu | Gln | Gln | Pro | Ser | Thr | Gln | Glu | Tyr |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Val | Leu | His | Val | Tyr | Glu | His | Leu | Ser | Lys | Pro | Lys | Val | Thr | Met |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Gly | Leu | Gln | Ser | Asn | Lys | Asn | Gly | Thr | Cys | Val | Thr | Asn | Leu | Thr |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Cys | Cys | Met | Glu | His | Gly | Glu | Glu | Asp | Val | Ile | Tyr | Thr | Trp | Lys |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ala | Leu | Gly | Gln | Ala | Ala | Asn | Glu | Ser | His | Asn | Gly | Ser | Ile | Leu |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Pro | Ile | Ser | Trp | Arg | Trp | Gly | Glu | Ser | Asp | Met | Thr | Phe | Ile | Cys |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Val | Ala | Arg | Asn | Pro | Val | Ser | Arg | Asn | Phe | Ser | Ser | Pro | Ile | Leu |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Ala | Arg | Lys | Leu | Cys | Glu | Gly | Ala | Ala | Asp | Asp | Pro | Asp | Ser | Ser |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Met | Val | Leu | Leu | Cys | Leu | Leu | Leu | Val | Pro | Leu | Leu | Leu | Ser | Leu |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Phe | Val | Leu | Gly | Leu | Phe | Leu | Trp | Phe | Leu | Lys | Arg | Glu | Arg | Gln |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Glu | Glu | Tyr | Ile | Glu | Glu | Lys | Lys | Arg | Val | Asp | Ile | Cys | Arg | Glu |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Thr | Pro | Asn | Ile | Cys | Pro | His | Ser | Gly | Glu | Asn | Thr | Glu | Tyr | Asp |

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 275 | | 280 | | 285 |
| Thr Ile Pro His | Thr Asn Arg Thr Ile | Leu Lys Glu Asp Pro | Ala | | |
| | 290 | 295 | 300 | | |
| Asn Thr Val Tyr | Ser Thr Val Glu Ile | Pro Lys Lys Met Glu | Asn | | |
| | 305 | 310 | 315 | | |
| Pro His Ser Leu | Leu Thr Met Pro Asp | Thr Pro Arg Leu Phe | Ala | | |
| | 320 | 325 | 330 | | |
| Tyr Glu Asn Val | Ile | | | | |
| | 335 | | | | |

<210> 254
 <211> 1053
 <212> DNA
 <213> Homo sapiens

<400> 254
 ctggttcccc aacatgcctc accctcatct atatcctttg gcagctcaca 50
 gggtcagcag cctctggacc cgtgaaagag ctggtcgggt ccgttggtgg 100
 ggccgtgact ttccccctga agtccaaagt aaagcaagtt gactctattg 150
 tctggacctt caacacaacc cctcttgta ccatacagcc agaagggggc 200
 actatcatag tgacccaaaa tcgtaatagg gagagagtag acttcccaga 250
 tggaggctac tccctgaagc tcagcaaact gaagaagaat gactcagga 300
 tctactatgt ggggatatac agctcatcac tccagcagcc ctccaccag 350
 gagtacgtgc tgcatgtcta cgagcacctg tcaaagccta aagtcaccat 400
 gggctctgcag agcaataaga atggcacctg tgtgaccaat ctgacatgct 450
 gcatggaaca tggggaagag gatgtgattt atacctggaa ggcctgggg 500
 caagcagcca atgagtccca taatgggtcc atcctccca tctcctggag 550
 atggggagaa agtgatatga ccttcatctg cgttgccagg aaccctgtca 600
 gcagaaactt ctcaagcccc atccttgcca ggaagctctg tgaaggtgct 650
 gctgatgacc cagattcctc catggtcctc ctgtgtctcc tgttggtgcc 700
 cctcctgctc agtctctttg tactggggct atttcttttg tttctgaaga 750
 gagagagaca agaagagtac attgaagaga agaagagagt ggacatttgt 800
 cgggaaactc ctaacatatg ccccatctt ggagagaaca cagagtacga 850
 cacaatccct cacactaata gaacaatcct aaaggaagat ccagcaaata 900
 cggtttactc cactgtggaa ataccgaaaa agatggaaaa tccccactca 950

ctgctcacga tgccagacac accaaggcta tttgcctatg agaatgttat 1000
ctagacagca gtgcactccc ctaagtctct gctcaaaaaa aaaaaaaaaa 1050
aaa 1053

<210> 255
<211> 860
<212> DNA
<213> Homo sapiens

<400> 255
gaaagacgtg gtcctgacag acagacaatc ctattcccta ccaaaatgaa 50
gatgctgctg ctgctgtggt tgggactgac cctagtctgt gtccatgcag 100
aagaagctag ttctacggga aggaacttta atgtagaaaa gattaatggg 150
gaatggcata ctattatcct ggcctctgac aaaagagaaa agatagaaga 200
acatggcaac tttagacttt ttctggagca aatccatgtc ttggagaatt 250
ccttagttct taaagtccat actgtaagag atgaagagtg ctccgaatta 300
tctatggttg ctgacaaaac agaaaaggct ggtgaatatt ctgtgacgta 350
tgatggattc aatacattta ctatacctaa gacagactat gataactttc 400
ttatggctca cctcat AAC gaaaaggatg gggaaacctt ccagctgatg 450
gggctctatg gccgagaacc agatttgagt tcagacatca aggaaagggt 500
tgcacaacta tgtgaggagc atggaatcct tagagaaaat atcattgacc 550
tatccaatgc caatcgctgc ctccaggccc gagaatgaag aatggcctga 600
gcctccagtg ttgagtggac acttctcacc aggactccac catcatccct 650
tcctatccat acagcatccc cagtataaat tctgtgatct gcattccatc 700
ctgtctcact gagaagtcca attccagtct atcaacatgt tacctaggat 750
acctcatcaa gaatcaaaga cttcttttaa tttctctttg atacaccctt 800
gacaattttt catgaaatta ttcctcttcc tgttcaataa atgattaccc 850
ttgcacttaa 860

<210> 256
<211> 180
<212> PRT
<213> Homo sapiens

<400> 256
Met Lys Met Leu Leu Leu Cys Leu Gly Leu Thr Leu Val Cys
1 5 10 15

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | His | Ala | Glu | Glu | Ala | Ser | Ser | Thr | Gly | Arg | Asn | Phe | Asn | Val | 20 | 25 | 30 |
| Glu | Lys | Ile | Asn | Gly | Glu | Trp | His | Thr | Ile | Ile | Leu | Ala | Ser | Asp | 35 | 40 | 45 |
| Lys | Arg | Glu | Lys | Ile | Glu | Glu | His | Gly | Asn | Phe | Arg | Leu | Phe | Leu | 50 | 55 | 60 |
| Glu | Gln | Ile | His | Val | Leu | Glu | Asn | Ser | Leu | Val | Leu | Lys | Val | His | 65 | 70 | 75 |
| Thr | Val | Arg | Asp | Glu | Glu | Cys | Ser | Glu | Leu | Ser | Met | Val | Ala | Asp | 80 | 85 | 90 |
| Lys | Thr | Glu | Lys | Ala | Gly | Glu | Tyr | Ser | Val | Thr | Tyr | Asp | Gly | Phe | 95 | 100 | 105 |
| Asn | Thr | Phe | Thr | Ile | Pro | Lys | Thr | Asp | Tyr | Asp | Asn | Phe | Leu | Met | 110 | 115 | 120 |
| Ala | His | Leu | Ile | Asn | Glu | Lys | Asp | Gly | Glu | Thr | Phe | Gln | Leu | Met | 125 | 130 | 135 |
| Gly | Leu | Tyr | Gly | Arg | Glu | Pro | Asp | Leu | Ser | Ser | Asp | Ile | Lys | Glu | 140 | 145 | 150 |
| Arg | Phe | Ala | Gln | Leu | Cys | Glu | Glu | His | Gly | Ile | Leu | Arg | Glu | Asn | 155 | 160 | 165 |
| Ile | Ile | Asp | Leu | Ser | Asn | Ala | Asn | Arg | Cys | Leu | Gln | Ala | Arg | Glu | 170 | 175 | 180 |

<210> 257
 <211> 766
 <212> DNA
 <213> Homo sapiens

<400> 257
 ggctcgagcg tttctgagcc aggggtgacc atgacctgct gcgaaggatg 50
 gacatcctgc aatggattca gcctgctggt tctactgctg ttaggagtag 100
 ttctcaatgc gatacctcta attgtcagct tagttgagga agaccaattt 150
 tctcaaaacc ccatctcttg ctttgagtgg tggttcccag gaattatagg 200
 agcaggtctg atggccattc cagcaacaac aatgtccttg acagcaagaa 250
 aaagagcgtg ctgcaacaac agaactggaa tgtttctttc atcatttttc 300
 agtgtgatca cagtcattgg tgctctgtat tgcattgctga tatccatcca 350
 ggctctctta aaaggctctc tcatgtgtaa ttctccaagc aacagtaatg 400
 ccaattgtga attttcattg aaaaacatca gtgacattca tccagaatcc 450

ttcaacttgc agtgggtttt caatgactct tgtgcacctc ctactgggtt 500
 caataaaccc accagtaacg acaccatggc gagtggctgg agagcatcta 550
 gtttccactt cgattctgaa gaaaacaaac ataggcttat ccacttctca 600
 gtatttttag gtctattgct tgttgggaatt ctggaggtcc tgtttgggct 650
 cagtcagata gtcacgggtt tccttggctg tctgtgtgga gtctctaagc 700
 gaagaagtca aattgtgtag tttaatggga ataaaatgta agtatcagta 750
 gtttgaaaaa aaaaaa 766

<210> 258
 <211> 229
 <212> PRT
 <213> Homo sapiens

<400> 258
 Met Thr Cys Cys Glu Gly Trp Thr Ser Cys Asn Gly Phe Ser Leu
 1 5 10 15
 Leu Val Leu Leu Leu Leu Gly Val Val Leu Asn Ala Ile Pro Leu
 20 25 30
 Ile Val Ser Leu Val Glu Glu Asp Gln Phe Ser Gln Asn Pro Ile
 35 40 45
 Ser Cys Phe Glu Trp Trp Phe Pro Gly Ile Ile Gly Ala Gly Leu
 50 55 60
 Met Ala Ile Pro Ala Thr Thr Met Ser Leu Thr Ala Arg Lys Arg
 65 70 75
 Ala Cys Cys Asn Asn Arg Thr Gly Met Phe Leu Ser Ser Phe Phe
 80 85 90
 Ser Val Ile Thr Val Ile Gly Ala Leu Tyr Cys Met Leu Ile Ser
 95 100 105
 Ile Gln Ala Leu Leu Lys Gly Pro Leu Met Cys Asn Ser Pro Ser
 110 115 120
 Asn Ser Asn Ala Asn Cys Glu Phe Ser Leu Lys Asn Ile Ser Asp
 125 130 135
 Ile His Pro Glu Ser Phe Asn Leu Gln Trp Phe Phe Asn Asp Ser
 140 145 150
 Cys Ala Pro Pro Thr Gly Phe Asn Lys Pro Thr Ser Asn Asp Thr
 155 160 165
 Met Ala Ser Gly Trp Arg Ala Ser Ser Phe His Phe Asp Ser Glu
 170 175 180

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Asn | Lys | His | Arg | Leu | Ile | His | Phe | Ser | Val | Phe | Leu | Gly | Leu |
| | | | | 185 | | | | | 190 | | | | | 195 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Val | Gly | Ile | Leu | Glu | Val | Leu | Phe | Gly | Leu | Ser | Gln | Ile |
| | | | | 200 | | | | | 205 | | | | | 210 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Ile | Gly | Phe | Leu | Gly | Cys | Leu | Cys | Gly | Val | Ser | Lys | Arg | Arg |
| | | | | 215 | | | | | 220 | | | | | 225 |

Ser Gln Ile Val

<210> 259
 <211> 434
 <212> DNA
 <213> Homo sapiens

<400> 259
 gtcgaatcca aatcactcat tgtgaaagct gagctcacag ccgaataagc 50
 caccatgagg ctgtcagtgt gtctcctgat ggtctcgctg gccctttgct 100
 gctaccaggc ccatgctctt gtctgcccag ctgttgcttc tgagatcaca 150
 gtcttcttat tcttaagtga cgctgcggtg aacctccaag ttgccaaact 200
 taatccacct ccagaagctc ttgcagccaa gttggaagtg aagcactgca 250
 ccgatcagat atcttttaag aaacgactct cattgaaaaa gtcctggtgg 300
 aaatagtga aaaatgtggt gtgtgacatg taaaaatgct caacctgggt 350
 tccaaagtct ttcaacgaca ccctgatctt cactaaaaat tgtaaagggt 400
 tcaacacggt gctttaataa atcacttgcc ctgc 434

<210> 260
 <211> 83
 <212> PRT
 <213> Homo sapiens

<400> 260
 Met Arg Leu Ser Val Cys Leu Leu Met Val Ser Leu Ala Leu Cys
 1 5 10 15
 Cys Tyr Gln Ala His Ala Leu Val Cys Pro Ala Val Ala Ser Glu
 20 25 30
 Ile Thr Val Phe Leu Phe Leu Ser Asp Ala Ala Val Asn Leu Gln
 35 40 45
 Val Ala Lys Leu Asn Pro Pro Pro Glu Ala Leu Ala Ala Lys Leu
 50 55 60
 Glu Val Lys His Cys Thr Asp Gln Ile Ser Phe Lys Lys Arg Leu
 65 70 75

Ser Leu Lys Lys Ser Trp Trp Lys
80

<210> 261
<211> 636
<212> DNA
<213> Homo sapiens

<400> 261
atccgttctc tgcgctgccca gctcaggtga gccctcgcca aggtgacctc 50
gcaggacact ggtgaaggag cagtgaggaa cctgcagagt cacacagttg 100
ctgaccaatt gagctgtgag cctggagcag atccgtgggc tgcagacccc 150
cgccccagtg cctctcccc tgcagccctg cccctcgaac tgtgacatgg 200
agagagtgac cctggccctt ctctactgg caggcctgac tgccttgga 250
gccaatgacc catttgccaa taaagacgat cccttctact atgactggaa 300
aaacctgcag ctgagcggac tgatctgagg agggctcctg gccattgctg 350
ggatcgcggc agttctgagt ggcaaatgca aatacaagag cagccagaag 400
cagcacagtc ctgtacctga gaaggccatc ccactcatca ctccaggctc 450
tgccactact tgctgagcac aggactggcc tccagggatg gcctgaagcc 500
taacactggc cccagcacc tcctcccctg ggaggcctta tcctcaagga 550
aggacttctc tccaagggca ggctgttagg cccctttctg atcaggaggc 600
ttctttatga attaaactcg cccaccacc ccctca 636

<210> 262
<211> 89
<212> PRT
<213> Homo sapiens

<400> 262
Met Glu Arg Val Thr Leu Ala Leu Leu Leu Leu Ala Gly Leu Thr
1 5 10 15
Ala Leu Glu Ala Asn Asp Pro Phe Ala Asn Lys Asp Asp Pro Phe
20 25 30
Tyr Tyr Asp Trp Lys Asn Leu Gln Leu Ser Gly Leu Ile Cys Gly
35 40 45
Gly Leu Leu Ala Ile Ala Gly Ile Ala Ala Val Leu Ser Gly Lys
50 55 60
Cys Lys Tyr Lys Ser Ser Gln Lys Gln His Ser Pro Val Pro Glu
65 70 75
Lys Ala Ile Pro Leu Ile Thr Pro Gly Ser Ala Thr Thr Cys

<210> 263
 <211> 1676
 <212> DNA
 <213> Homo sapiens

<400> 263
 ggagaagagg ttgtgtggga caagctgctc cgcacagaag gatgtcgctg 50
 ctgagcctgc cctggctggg cctcagaccg gtggcaatgt ccccatggct 100
 actcctgctg ctggttgtgg gctcctggct actcgcccgc atcctggctt 150
 ggacctatgc cttctataac aactgccgcc ggctccagtg tttcccacag 200
 cccccaaaac ggaactgggt ttgggggtcac ctgggcctga tcactcctac 250
 agaggagggc ttgaaggact cgaccagat gtcggccacc tattcccagg 300
 gctttacggg atggctgggt cccatcatcc ccttcacgtg tttatgccac 350
 cctgacacca tccggtctat caccaatgcc tcagctgcca ttgcacccaa 400
 ggataatctc ttcacaggt tcctgaagcc ctggctggga gaagggatac 450
 tgctgagtgg cggtgacaag tggagccgcc accgtcggat gctgacgcc 500
 gccttccatt tcaacatcct gaagtcctat ataacgatct tcaacaagag 550
 tgcaaacatc atgcttgaca agtggcagca cctggcctca gagggcagca 600
 gtcgtctgga catgtttgag cacatcagcc tcacgacctt ggacagtcta 650
 cagaaatgca tcttcagctt tgacagccat tgcaggaga ggcccagtga 700
 atatattgcc accatcttgg agctcagtgc ccttgtagag aaaagaagcc 750
 agcatatcct ccagcacatg gactttctgt attacctctc ccatgacggg 800
 cggcgcttcc acagggcctg ccgcctggtg catgacttca cagacgctgt 850
 catccgggag cggcgctcga cctccccac tcagggtatt gatgattttt 900
 tcaaagacaa agccaagtcc aagactttgg atttcattga tgtgcttctg 950
 ctgagcaagg atgaagatgg gaaggcattg tcagatgagg atataagagc 1000
 agaggctgac accttcatgt ttggaggcca tgacaccacg gccagtggcc 1050
 tctcctgggt cctgtacaac cttgcgaggc acccagaata ccaggagcgc 1100
 tgccgacagg aggtgcaaga gcttctgaag gaccgcatc ctaaagagat 1150
 tgaatgggac gacctggccc agctgcctt cctgaccatg tgcgtgaagg 1200
 agagcctgag gttacatccc ccagctccct tcactctccg atgctgcacc 1250

caggacattg ttctcccaga tggccgagtc atccccaag gcattacctg 1300
 cctcatcgat attatagggg tccatcacia cccaactgtg tggccggatc 1350
 ctgagggtcta cgacccttc cgctttgacc cagagaacag caaggggagg 1400
 tcacctctgg cttttattcc tttctccgca gggcccagga actgcatcgg 1450
 gcaggcggtc gccatggcgg agatgaaagt ggtcctggcg ttgatgctgc 1500
 tgcacttccg gttcctgcca gaccacactg agccccgcag gaagctggaa 1550
 ttgatcatgc ggcgcgaggg cgggctttgg ctgcgggtgg agccccctgaa 1600
 tgtaggcttg cagtgacttt ctgaccatc cacctgtttt tttgcagatt 1650
 gtcatgaata aaacggtgct gtcaaa 1676

<210> 264

<211> 524

<212> PRT

<213> Homo sapiens

<400> 264

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ser | Leu | Leu | Ser | Leu | Pro | Trp | Leu | Gly | Leu | Arg | Pro | Val | Ala | 1 | 5 | 10 | 15 |
| Met | Ser | Pro | Trp | Leu | Leu | Leu | Leu | Val | Val | Gly | Ser | Trp | Leu | | 20 | 25 | 30 | |
| Leu | Ala | Arg | Ile | Leu | Ala | Trp | Thr | Tyr | Ala | Phe | Tyr | Asn | Asn | Cys | 35 | 40 | 45 | |
| Arg | Arg | Leu | Gln | Cys | Phe | Pro | Gln | Pro | Pro | Lys | Arg | Asn | Trp | Phe | 50 | 55 | 60 | |
| Trp | Gly | His | Leu | Gly | Leu | Ile | Thr | Pro | Thr | Glu | Glu | Gly | Leu | Lys | 65 | 70 | 75 | |
| Asp | Ser | Thr | Gln | Met | Ser | Ala | Thr | Tyr | Ser | Gln | Gly | Phe | Thr | Val | 80 | 85 | 90 | |
| Trp | Leu | Gly | Pro | Ile | Ile | Pro | Phe | Ile | Val | Leu | Cys | His | Pro | Asp | 95 | 100 | 105 | |
| Thr | Ile | Arg | Ser | Ile | Thr | Asn | Ala | Ser | Ala | Ala | Ile | Ala | Pro | Lys | 110 | 115 | 120 | |
| Asp | Asn | Leu | Phe | Ile | Arg | Phe | Leu | Lys | Pro | Trp | Leu | Gly | Glu | Gly | 125 | 130 | 135 | |
| Ile | Leu | Leu | Ser | Gly | Gly | Asp | Lys | Trp | Ser | Arg | His | Arg | Arg | Met | 140 | 145 | 150 | |
| Leu | Thr | Pro | Ala | Phe | His | Phe | Asn | Ile | Leu | Lys | Ser | Tyr | Ile | Thr | 155 | 160 | 165 | |

| | | | |
|---|-----|-----|-----|
| Ile Phe Asn Lys Ser Ala Asn Ile Met Leu Asp Lys Trp Gln His | 170 | 175 | 180 |
| Leu Ala Ser Glu Gly Ser Ser Arg Leu Asp Met Phe Glu His Ile | 185 | 190 | 195 |
| Ser Leu Met Thr Leu Asp Ser Leu Gln Lys Cys Ile Phe Ser Phe | 200 | 205 | 210 |
| Asp Ser His Cys Gln Glu Arg Pro Ser Glu Tyr Ile Ala Thr Ile | 215 | 220 | 225 |
| Leu Glu Leu Ser Ala Leu Val Glu Lys Arg Ser Gln His Ile Leu | 230 | 235 | 240 |
| Gln His Met Asp Phe Leu Tyr Tyr Leu Ser His Asp Gly Arg Arg | 245 | 250 | 255 |
| Phe His Arg Ala Cys Arg Leu Val His Asp Phe Thr Asp Ala Val | 260 | 265 | 270 |
| Ile Arg Glu Arg Arg Arg Thr Leu Pro Thr Gln Gly Ile Asp Asp | 275 | 280 | 285 |
| Phe Phe Lys Asp Lys Ala Lys Ser Lys Thr Leu Asp Phe Ile Asp | 290 | 295 | 300 |
| Val Leu Leu Leu Ser Lys Asp Glu Asp Gly Lys Ala Leu Ser Asp | 305 | 310 | 315 |
| Glu Asp Ile Arg Ala Glu Ala Asp Thr Phe Met Phe Gly Gly His | 320 | 325 | 330 |
| Asp Thr Thr Ala Ser Gly Leu Ser Trp Val Leu Tyr Asn Leu Ala | 335 | 340 | 345 |
| Arg His Pro Glu Tyr Gln Glu Arg Cys Arg Gln Glu Val Gln Glu | 350 | 355 | 360 |
| Leu Leu Lys Asp Arg Asp Pro Lys Glu Ile Glu Trp Asp Asp Leu | 365 | 370 | 375 |
| Ala Gln Leu Pro Phe Leu Thr Met Cys Val Lys Glu Ser Leu Arg | 380 | 385 | 390 |
| Leu His Pro Pro Ala Pro Phe Ile Ser Arg Cys Cys Thr Gln Asp | 395 | 400 | 405 |
| Ile Val Leu Pro Asp Gly Arg Val Ile Pro Lys Gly Ile Thr Cys | 410 | 415 | 420 |
| Leu Ile Asp Ile Ile Gly Val His His Asn Pro Thr Val Trp Pro | 425 | 430 | 435 |
| Asp Pro Glu Val Tyr Asp Pro Phe Arg Phe Asp Pro Glu Asn Ser | 440 | 445 | 450 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Gly | Arg | Ser | Pro | Leu | Ala | Phe | Ile | Pro | Phe | Ser | Ala | Gly | Pro |
| | | | | 455 | | | | | 460 | | | | | 465 |
| | | | | | | | | | | | | | | |
| Arg | Asn | Cys | Ile | Gly | Gln | Ala | Phe | Ala | Met | Ala | Glu | Met | Lys | Val |
| | | | | 470 | | | | | 475 | | | | | 480 |
| | | | | | | | | | | | | | | |
| Val | Leu | Ala | Leu | Met | Leu | Leu | His | Phe | Arg | Phe | Leu | Pro | Asp | His |
| | | | | 485 | | | | | 490 | | | | | 495 |
| | | | | | | | | | | | | | | |
| Thr | Glu | Pro | Arg | Arg | Lys | Leu | Glu | Leu | Ile | Met | Arg | Ala | Glu | Gly |
| | | | | 500 | | | | | 505 | | | | | 510 |
| | | | | | | | | | | | | | | |
| Gly | Leu | Trp | Leu | Arg | Val | Glu | Pro | Leu | Asn | Val | Gly | Leu | Gln | |
| | | | | 515 | | | | | 520 | | | | | |

<210> 265
 <211> 584
 <212> DNA
 <213> Homo sapiens

<400> 265
 caacagaagc caagaaggaa gccgtctatc ttgtggcgat catgtataag 50
 ctggcctcct gctgtttgct tttcacagga ttcttaaadc ctctcttadc 100
 tcttcctctc cttgactcca gggaaatadc ctttcaactc tcagcacctc 150
 atgaagacgc gcgcttaact ccggaggagc tagaaagagc ttcccttcta 200
 cagatattgc cagagatgct ggggtgcagaa agaggggata ttctcaggaa 250
 agcagactca agtaccaaca tttttaaccc aagaggaaat ttgagaaagt 300
 ttcaggatct ctctggacaa gacctaaca ttttactgag tcatcttttg 350
 gccagaatct ggaaaccata caagaaacgt gagactcctg attgcttctg 400
 gaaatactgt gtctgaagtg aaataagcat ctgttagtca gctcagaaac 450
 acccatctta gaatatgaaa aataacacaa tgcttgattt gaaaacagtg 500
 tggagaaaaa ctaggcaaac tacaccctgt tcattgttac ctggaaaata 550
 aatcctctat gttttgcaca aaaaaaaaaa aaaa 584

<210> 266
 <211> 124
 <212> PRT
 <213> Homo sapiens

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Tyr | Lys | Leu | Ala | Ser | Cys | Cys | Leu | Leu | Phe | Thr | Gly | Phe | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| | | | | | | | | | | | | | | |
| Asn | Pro | Leu | Leu | Ser | Leu | Pro | Leu | Leu | Asp | Ser | Arg | Glu | Ile | Ser |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Gln | Leu | Ser | Ala | Pro | His | Glu | Asp | Ala | Arg | Leu | Thr | Pro | Glu |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Glu | Leu | Glu | Arg | Ala | Ser | Leu | Leu | Gln | Ile | Leu | Pro | Glu | Met | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Gly | Ala | Glu | Arg | Gly | Asp | Ile | Leu | Arg | Lys | Ala | Asp | Ser | Ser | Thr |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Asn | Ile | Phe | Asn | Pro | Arg | Gly | Asn | Leu | Arg | Lys | Phe | Gln | Asp | Phe |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ser | Gly | Gln | Asp | Pro | Asn | Ile | Leu | Leu | Ser | His | Leu | Leu | Ala | Arg |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ile | Trp | Lys | Pro | Tyr | Lys | Lys | Arg | Glu | Thr | Pro | Asp | Cys | Phe | Trp |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Lys | Tyr | Cys | Val | | | | | | | | | | | |

<210> 267
 <211> 654
 <212> DNA
 <213> Homo sapiens

<400> 267
 gaacattttt agttcccaag gaatgtacat cagccccacg gaagctaggc 50
 cacctctggg atgggggttg tggtttaaaa caaacgccag tcctcctata 100
 taaggacctg acagccacca ggcaccacct ccgccaggaa ctgcaggccc 150
 acctgtctgc aaccagctg aggccatgcc ctccccaggg accgtctgca 200
 gcctcctgct cctcgccatg ctctggctgg acttgcccat ggcaggctcc 250
 agcttcctga gccctgaaca ccagagagtc cagcagagaa aggagtcgaa 300
 gaagccacca gccaaagctg agccccgagc tctagcaggc tggctccgcc 350
 cggaagatgg aggtcaagca gaaggggcag aggatgaact ggaagtccgg 400
 ttcaacgccc cctttgatgt tggaatcaag ctgtcagggg ttcagtacca 450
 gcagcacagc caggccctgg ggaagtttct tcaggacatc ctctgggaag 500
 aggccaaaga ggccccagcc gacaagtgat cgccacaag ccttactcac 550
 ctctctctaa gtttagaagc gtcacatctg cttttcgctt gcttctgcag 600
 caactcccac gactgttgta caagctcagg aggccaataa atgttcaaac 650
 tgta 654

<210> 268

<211> 117
<212> PRT
<213> Homo sapiens

<400> 268
Met Pro Ser Pro Gly Thr Val Cys Ser Leu Leu Leu Leu Gly Met
1 5 10 15
Leu Trp Leu Asp Leu Ala Met Ala Gly Ser Ser Phe Leu Ser Pro
20 25 30
Glu His Gln Arg Val Gln Gln Arg Lys Glu Ser Lys Lys Pro Pro
35 40 45
Ala Lys Leu Gln Pro Arg Ala Leu Ala Gly Trp Leu Arg Pro Glu
50 55 60
Asp Gly Gly Gln Ala Glu Gly Ala Glu Asp Glu Leu Glu Val Arg
65 70 75
Phe Asn Ala Pro Phe Asp Val Gly Ile Lys Leu Ser Gly Val Gln
80 85 90
Tyr Gln Gln His Ser Gln Ala Leu Gly Lys Phe Leu Gln Asp Ile
95 100 105
Leu Trp Glu Glu Ala Lys Glu Ala Pro Ala Asp Lys
110 115

<210> 269
<211> 1332
<212> DNA
<213> Homo sapiens

<400> 269
cggccacagc tggcatgctc tgcctgatcg ccatacctgct gtatgtcctc 50
gtccagtacc tcgtgaaccc cgggggtgctc cgcacggacc ccagatgtca 100
agaatatgaa cacgtggctg ctgttcctcc ccctgttccc ggtgcagggtg 150
cagaccctga tagtcgtgat catcgggatg ctcgtgctcc tgctggactt 200
tcttggttg gtgcacctgg gccagctgct catcttcac atctacctga 250
gtatgtcccc caccctaagc ccccgatccc cccaaggctg ggtggtcaga 300
gctgctcatc ttacacctct acttgagtat gtccctaacc ctgagcccc 350
cacgcctggg gccagagtct ttgtcccccg tgtgcgcatg tggtcagggt 400
cagcctctcc cagaagtga atcatggaca aaaagggcaa atcacaggaa 450
gaaattaaat ccatgaggac ccagcaggcc cagcaagaag ctgaactcac 500
gccgagacct gcaggagtgg tgccagggtgc ttgaagtaac aagtttaaaa 550

tgttcagaga caatggaatg gaatctatta ggcaagaaca ggacattatg 600
 aaataaggac aggtggactt ccaaaaacac aagtagaaat tctaacaatg 650
 aaatatatta caggcaggtc acccactaac caaacaactg aagcgagagc 700
 tgtggtcttg cttggtctca cagtgggcac agcggtaggc ggtcagtcac 750
 gttgctgaac gacggagggt aaactcccca gcccgaagaa aacctgtgtt 800
 ggaagtaaca acaacctccc tgctcctggc accagccgtt ttggtcatgg 850
 tgggccagct gcaaagcgtc ttccattctc tgggcagtgg tggccccgag 900
 gctgtggcct ctcagggggg ttctgtggac acgggcagca gagtgtgtcc 950
 aggccagccc ccaagaatgc cctgctcctg acagcttggc caaccctgg 1000
 tcagggcaga gggagttggg tgggtcaggc tctgggctca cctccatctc 1050
 cagagcatcc cctgcctgca gttgtggcaa gaacgcccag ctcagaatga 1100
 acacacccca ccaagagcct ccttgttcat aaccacaggt taccctacaa 1150
 accactgtcc ccacacaacc ctggggatgt tttaaaacac acacctctaa 1200
 cgcatatctt acagtcactg ttgtcttgcc tgagggttga atttttttta 1250
 atgaaagtgc aatgaaaatc actggattaa atcctacgga cacagagctg 1300
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aa 1332

<210> 270

<211> 142

<212> PRT

<213> Homo sapiens

<400> 270

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asn | Thr | Trp | Leu | Leu | Phe | Leu | Pro | Leu | Phe | Pro | Val | Gln | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Gln | Thr | Leu | Ile | Val | Val | Ile | Ile | Gly | Met | Leu | Val | Leu | Leu | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Asp | Phe | Leu | Gly | Leu | Val | His | Leu | Gly | Gln | Leu | Leu | Ile | Phe | His |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Ile | Tyr | Leu | Ser | Met | Ser | Pro | Thr | Leu | Ser | Pro | Arg | Ser | Pro | Gln |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Gly | Trp | Val | Val | Arg | Ala | Ala | His | Leu | Thr | Pro | Leu | Leu | Glu | Tyr |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Val | Pro | Asn | Pro | Glu | Pro | Pro | Thr | Pro | Gly | Ala | Arg | Val | Phe | Val |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Pro | Arg | Val | Arg | Met | Cys | Ser | Gly | Ser | Ala | Ser | Pro | Arg | Ser | Glu |

| | | | | | |
|---|-----|--|-----|--|-----|
| | 95 | | 100 | | 105 |
| Ile Met Asp Lys Lys Gly Lys Ser Gln Glu Glu Ile Lys Ser Met | | | | | |
| | 110 | | 115 | | 120 |
| Arg Thr Gln Gln Ala Gln Gln Glu Ala Glu Leu Thr Pro Arg Pro | | | | | |
| | 125 | | 130 | | 135 |
| Ala Gly Val Val Pro Gly Ala | | | | | |
| | 140 | | | | |

<210> 271
 <211> 1484
 <212> DNA
 <213> Homo sapiens

<400> 271
 ggagtgcaga tggcatcctt cggttcttcc agacaagctg caagacgctg 50
 accatggcca agatggagct ctcgaaggcc ttctctggcc agcggacact 100
 cctatctgcc atcctcagca tgctatcact cagcttctcc acaacatccc 150
 tgctcagcaa ctactggttt gtgggcacac agaaggtgcc caagcccctg 200
 tgcgagaaag gtctggcagc caagtgcttt gacatgccag tgtccctgga 250
 tggagatacc aacacatcca cccaggaggt ggtacaatac aactgggaga 300
 ctggggatga ccggttctcc ttccggagct tccggagtgg catgtggcta 350
 tcctgtgagg aaactgtgga agaaccaggg gagaggtgcc gaagtttcat 400
 tgaacttaca ccaccagcca agagaggtga gaaaggacta ctggaatttg 450
 ccacgttgca aggcccatgt caccctactc tccgatttgg agggaagcgg 500
 ttgatggaga aggcttcctt cccctccctt cccttggggc tttgtggcaa 550
 aaatcctatg gttatccctg ggaacgcaga tcacctacat cggacttcaa 600
 ttcatcagct tcctcctgct actaacagac ttgctactca ctgggaaccc 650
 tgctgtggg ctcaaactga ggcctttgc tgctgtttcc tctgtcctgt 700
 caggtctcct ggggatggtg gccacatga tgtattcaca agtcttccaa 750
 gcgactgtca acttgggtcc agaagactgg agaccacatg tttggaatta 800
 tggctgggcc ttctacatgg cctggctctc cttcacctgc tgcattggcg 850
 cggctgtcac caccttcaac acgtacacca ggatggtgct ggagttcaag 900
 tgcaagcata gtaagagctt caaggaaaac ccgaactgcc taccacatca 950
 ccatcagtgt ttccctcggc ggctgtcaag tgcagcccc accgtgggtc 1000

ctttgaccag ctaccaccag tatcataatc agcccatcca ctctgtctct 1050
 gagggagtcg acttctactc cgagctgctg aacaagggat ttcaaagagg 1100
 ggccagccag gagctgaaag aagcagttag gtcattctgta gaggaagagc 1150
 agtgtagga gttaagcggg tttggggagt aggcttgagc cctaccttac 1200
 acgtctgctg attatcaaca tgtgcttaag ccaacatccg tctcttgagc 1250
 atggttttta gaggctacga ataaggctat gaataagggt tatctttaag 1300
 tcctaagggg ttcctgggtg cctactgctct ctttctctct acagctccat 1350
 cttgtttcac ccacccaca tctcacacat ccagaattcc cttctttact 1400
 gatagtttct gtgccagggt ctgggctaaa ccatggagat aaaaagaaga 1450
 gtaaaataca cttcccgacc ttaaggatct gaaa 1484

<210> 272

<211> 285

<212> PRT

<213> Homo sapiens

<400> 272

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Lys | Met | Glu | Leu | Ser | Lys | Ala | Phe | Ser | Gly | Gln | Arg | Thr | 1 | 5 | 10 | 15 |
| Leu | Leu | Ser | Ala | Ile | Leu | Ser | Met | Leu | Ser | Leu | Ser | Phe | Ser | Thr | 20 | 25 | 30 | |
| Thr | Ser | Leu | Leu | Ser | Asn | Tyr | Trp | Phe | Val | Gly | Thr | Gln | Lys | Val | 35 | 40 | 45 | |
| Pro | Lys | Pro | Leu | Cys | Glu | Lys | Gly | Leu | Ala | Ala | Lys | Cys | Phe | Asp | 50 | 55 | 60 | |
| Met | Pro | Val | Ser | Leu | Asp | Gly | Asp | Thr | Asn | Thr | Ser | Thr | Gln | Glu | 65 | 70 | 75 | |
| Val | Val | Gln | Tyr | Asn | Trp | Glu | Thr | Gly | Asp | Asp | Arg | Phe | Ser | Phe | 80 | 85 | 90 | |
| Arg | Ser | Phe | Arg | Ser | Gly | Met | Trp | Leu | Ser | Cys | Glu | Glu | Thr | Val | 95 | 100 | 105 | |
| Glu | Glu | Pro | Gly | Glu | Arg | Cys | Arg | Ser | Phe | Ile | Glu | Leu | Thr | Pro | 110 | 115 | 120 | |
| Pro | Ala | Lys | Arg | Gly | Glu | Lys | Gly | Leu | Leu | Glu | Phe | Ala | Thr | Leu | 125 | 130 | 135 | |
| Gln | Gly | Pro | Cys | His | Pro | Thr | Leu | Arg | Phe | Gly | Gly | Lys | Arg | Leu | 140 | 145 | 150 | |
| Met | Glu | Lys | Ala | Ser | Leu | Pro | Ser | Pro | Pro | Leu | Gly | Leu | Cys | Gly | | | | |

| | 155 | | 160 | | 165 |
|-----------------|---|--|-----|--|-----|
| Lys Asn Pro Met | Val Ile Pro Gly Asn Ala Asp His Leu His Arg | | | | |
| | 170 | | 175 | | 180 |
| Thr Ser Ile His | Gln Leu Pro Pro Ala Thr Asn Arg Leu Ala Thr | | | | |
| | 185 | | 190 | | 195 |
| His Trp Glu Pro | Cys Leu Trp Ala Gln Thr Glu Arg Leu Cys Cys | | | | |
| | 200 | | 205 | | 210 |
| Cys Phe Leu Cys | Pro Val Arg Ser Pro Gly Asp Gly Gly Pro His | | | | |
| | 215 | | 220 | | 225 |
| Asp Val Phe Thr | Ser Leu Pro Ser Asp Cys Gln Leu Gly Ser Arg | | | | |
| | 230 | | 235 | | 240 |
| Arg Leu Glu Thr | Thr Cys Leu Glu Leu Trp Leu Gly Leu Leu His | | | | |
| | 245 | | 250 | | 255 |
| Gly Leu Ala Leu | Leu His Leu Leu His Gly Val Gly Cys His His | | | | |
| | 260 | | 265 | | 270 |
| Leu Gln His Val | His Gln Asp Gly Ala Gly Val Gln Val Gln Ala | | | | |
| | 275 | | 280 | | 285 |

<210> 273
 <211> 1158
 <212> DNA
 <213> Homo sapiens

<400> 273
 aactggaagg aaagaaagaa aggtcagctt tggcccagat gtggttaccc 50
 cttggtctcc tgtctttatg tctttctcct ctctctattc tgtcatctcc 100
 ctcaacttaag tctcaggcct gtcagcagct cctgtggaca ttgccatccc 150
 ctctggtagc cttcagagca aacaggacaa cctatgttat ggatgtttcc 200
 accaaccagg gtagtggcat ggagcaccgt aaccatctgt gcttctgtga 250
 tctctatgac agagccactt ctccacctct gaaatgttcc ctgctctgaa 300
 atctggcatg agatggcaca ggtgaccacg cagaagccac cagaatcttg 350
 cctgccttat tctctctccc aagtctgttc tcttattgtc aacctcagca 400
 caacaggctg gcgccaatgg cattacagag aaagcaatct gtgtggctag 450
 tgggcagatt accatgcaag ccccaggaga aatggaggag cttttagacc 500
 acctccctgt cagccagtat taacatgtcc ccttccccct gccccgccgt 550
 agattcagga cattcgcccc tgtgtgccac caaaccagga ctttccccct 600
 ggcttggcat ccctggctct ctcttggtac ccagcaagac gtctgttcca 650

gggcagtgtgta gcatcttttca agctccgtta ctatggcgat ggccatgatg 700
 ttacaatccc acttgccctga ataatcaagt gggaagggga agcagaggga 750
 aatgggggcca tgtgaatgca gctgctctgt tctccctacc ctgaggaaaa 800
 accaaagggga agcaacagga acttctgcaa ctgggttttta tcggaaagat 850
 catcctgcct gcagatgctg ttgaaggggc acaagaaatg tagctggaga 900
 agattgatga aagtgcaggt gtgtaaggaa atagaacagt ctgctgggag 950
 tcagacctgg aattctgatt ccaaactctt tattactttg ggaagtcact 1000
 cagcctcccc gtagccatct ccagggtgac ggaaccctgt gtattacctg 1050
 ctggaaccaa ggaaactaac aatgtaggtt actagtgaat accccaatgg 1100
 tttctccaat tatgcccatg ccaccaaaac aataaaacaa aattctctaa 1150
 cactgaaa 1158

<210> 274
 <211> 86
 <212> PRT
 <213> Homo sapiens

<400> 274
 Met Trp Leu Pro Leu Gly Leu Leu Ser Leu Cys Leu Ser Pro Leu
 1 5 10 15
 Pro Ile Leu Ser Ser Pro Ser Leu Lys Ser Gln Ala Cys Gln Gln
 20 25 30
 Leu Leu Trp Thr Leu Pro Ser Pro Leu Val Ala Phe Arg Ala Asn
 35 40 45
 Arg Thr Thr Tyr Val Met Asp Val Ser Thr Asn Gln Gly Ser Gly
 50 55 60
 Met Glu His Arg Asn His Leu Cys Phe Cys Asp Leu Tyr Asp Arg
 65 70 75
 Ala Thr Ser Pro Pro Leu Lys Cys Ser Leu Leu
 80 85

<210> 275
 <211> 2694
 <212> DNA
 <213> Homo sapiens

<400> 275
 gtagcgcgctc ttgggtctcc cggtgcccgc tgctgccgcc gccgcctcgg 50
 gtcgtggagc caggagcgac gtcaccgcca tggcaggcat caaagctttg 100

attagtttgt cctttggagg agcaatcgga ctgatgtttt tgatgcttgg 150
atgtgccctt ccaatataca acaaatactg gccctctttt gttctatttt 200
tttacatcct ttcacctatt ccatactgca tagcaagaag attagtggat 250
gatacagatg ctatgagtaa cgcttgtaag gaacttgcca tctttcttac 300
aacgggcatt gtcgtgtcag cttttggact ccctattgta tttgccagag 350
cacatctgat tgagtgggga gcttgtgcac ttgttctcac aggaaacaca 400
gtcatctttg caactatact aggccttttc ttggctcttg gaagcaatga 450
cgacttcagc tggcagcagt ggtgaaaaga aattactgaa ctattgtcaa 500
atggacttcc tgtcatttgt tggccattca cgcacacagg agatggggca 550
gttaatgctg aatggtatag caagcctctt gggggtattt taggtgctcc 600
cttctcactt ttattgtaag catactattt tcacagagac ttgctgaagg 650
attaaaagga ttttctcttt tggaaaagct tgactgattt cacacttatt 700
tatagtatgc tttttgtggt gtccctgctga atttaaatat ttatgtgttt 750
ttcctgttag gttgattttt tttggaatca atatgcaatg ttaaacactt 800
ttttaatgta atcatttgca ttggttagga attcagaatt ccgccggctc 850
tattactggt caagtacatc ttttctctta aaattattta gcctccatta 900
ttacaaaaaa ttataaaaat aagttttcag tcagtcagga tgacatcact 950
cccaatgtta tgcagacata cagacggttg gcatacgtta tagactgtat 1000
actcagtgca aatatagctg catctatacc tcagaggggc caagtgttaa 1050
tgcccatgcc ctccgttaag ggttgttggt tttactggta gacagatgtt 1100
ttgtggattg aaaattattt tatggaattg ctacagagga gtgcttttct 1150
tctcaattgt tagaagaatt tatgttaaac ttttaaggtaa ggggtgaaaa 1200
acatttttga gataaggttt ttatttatgt ttattattgt tagagtgagt 1250
tgcaatgtgg gaagaaatga cattgaaatt ccagtttttg aatcctgttt 1300
ctatttataa gtgaaatttg tgatctccta tcaacctttc atgttttacc 1350
ctgttaaaat ggacatacat ggaaccacta ctgatgaggg acagttgtat 1400
gtttgcatca tatatgccag aaaaccttcc tctgcttcct ccttttgact 1450
tatttggtat gttgtatata ttacataaaa taacttttca aatatagttt 1500
aataacactt agaagtgttt acttacctgg aaaataattg ctatgccgta 1550

cattcagagt gccccctccc ctgcaaggcc ttgccatgat taacaagtaa 1600
cttggttagtc ttacagataa ttcattgcatt aacagtttaa gatttagacc 1650
atggtaatag tagttcttat tctctaaggt tatatcatat gtaatttaaa 1700
agtattttta agacaagttt cctgtatacc tctgaactgt tttgattttg 1750
agttcatcat gatagatctg ctgtttcctt ataaaaggca tttgttgtgt 1800
gagttaatgc aaagtagcca agtccagcta tatagcagct tcagaaacat 1850
acctgaccaa aaaattccca gtaaccaggc atgatcaatt tatagtgggc 1900
gtttacatct aataattatc aggacttttt tcaggagtgg gttataaaaa 1950
cattcaagtt ggtctgacag tattttgtta aggatatttg tttgtatgtt 2000
tattcagtat acttacataa aaattatttc gccatcagcc aaaactcagt 2050
aatcatgaca gctgtctgtt gttttatgaa gtttatttct caagaaaatg 2100
ggaataaatt tgggatttgt tcagcttttt tactaaagat gcctaaagcc 2150
acaggtttta ttgcctaact taagccatga cttttagata tgagatgacg 2200
ggaagcagga cgaaatatcg gcgtgtggct ggagccttcc cactggaggc 2250
tgaaagtggc ttgtggtatt ataatgttca gatttcaaga ggaaggtgca 2300
ggtagacatg agttagagag ctggtgagac agttgggaac tctttgtgct 2350
tgtgatctac tggacttttt ttttgagga agtgcattct ctggtccttc 2400
cctattttct gttctggatg tcagtgcagt gcactgctac tgttttatcc 2450
acttggccac agactttttc taacagctgc gtattatttc tatatactaa 2500
ttgcattggc agcatttgtt ctttgacctt gtatactagc ttgacatagt 2550
gctgtctctg atttctaggc tagttacttg agatatgaat tttccataga 2600
atatgcactg atacaacatt accattcttc tatggaaaga aaacttttga 2650
tgatgaaaca ataaagattt taaatatcta ttttaaaaaa aaaa 2694

<210> 276

<211> 131

<212> PRT

<213> Homo sapiens

<400> 276

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Gly | Ile | Lys | Ala | Leu | Ile | Ser | Leu | Ser | Phe | Gly | Gly | Ala |
| 1 | | | | 5 | | | | 10 | | | | | 15 | |

Ile Gly Leu Met Phe Leu Met Leu Gly Cys Ala Leu Pro Ile Tyr

| 20 | | | | | | | | | | 25 | | | | | 30 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Asn | Lys | Tyr | Trp | Pro | Leu | Phe | Val | Leu | Phe | Phe | Tyr | Ile | Leu | Ser | | | | | |
| | | | | 35 | | | | | 40 | | | | | 45 | | | | | |
| Pro | Ile | Pro | Tyr | Cys | Ile | Ala | Arg | Arg | Leu | Val | Asp | Asp | Thr | Asp | | | | | |
| | | | | 50 | | | | | 55 | | | | | 60 | | | | | |
| Ala | Met | Ser | Asn | Ala | Cys | Lys | Glu | Leu | Ala | Ile | Phe | Leu | Thr | Thr | | | | | |
| | | | | 65 | | | | | 70 | | | | | 75 | | | | | |
| Gly | Ile | Val | Val | Ser | Ala | Phe | Gly | Leu | Pro | Ile | Val | Phe | Ala | Arg | | | | | |
| | | | | 80 | | | | | 85 | | | | | 90 | | | | | |
| Ala | His | Leu | Ile | Glu | Trp | Gly | Ala | Cys | Ala | Leu | Val | Leu | Thr | Gly | | | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | | | |
| Asn | Thr | Val | Ile | Phe | Ala | Thr | Ile | Leu | Gly | Phe | Phe | Leu | Val | Phe | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Gly | Ser | Asn | Asp | Asp | Phe | Ser | Trp | Gln | Gln | Trp | | | | | | | | | |
| | | | | 125 | | | | | 130 | | | | | | | | | | |

<210> 277
 <211> 4104
 <212> DNA
 <213> Homo sapiens

<400> 277
 cccacgcgtc cgcccacgcg tccgcccacg cgctccgccca cgcgtccgcc 50
 cacgcgtccg cccacgcgtc cgcccacgcg tccggtgcaa gctcgcgccg 100
 cacactgcct ggtggaggga aggagcccgg gcgcctctcg ccgctccccg 150
 cgccgcgcgc cgcacctccc caccgcccgc cgcccgcgc cgcgcgccg 200
 caaagcatga gtgagcccgc tctctgcagc tgcccggggc gcgaatggca 250
 ggctgtttcc gcggagtaaa aggtggcgcc ggtcagtggc cgtttccaat 300
 gacggacatt aaccagactg tcagatcctg gggagtcgcg agccccgagt 350
 ttggagtttt ttccccccac aacgtcacag tccgaactgc agagggaag 400
 gaaggcggca ggaaggcgaa gctcgggctc cggcacgtag ttgggaaact 450
 tgccgggtcct agaagtcgcc tccccgcctt gccggccgcc cttgcagccc 500
 cgagccgagc agcaaagtga gacattgtgc gcctgccaga tccgccggcc 550
 gcggaccggg gctgcctcgg aaacacagag gggctcttctc tcgccctgca 600
 tataattagc ctgcacacaa agggagcagc tgaatggagg ttgtcactct 650
 ctggaaaagg atttctgacc gagcgcttcc aatggacatt ctccagtctc 700

tctggaaaga ttctcgctaa tggatttcct gctgctcggc ctctgtctat 750
actggctgct gaggaggccc tcgggggtgg tcttgtgtct gctggggggc 800
tgctttcaga tgctgccgc cgccccagc gggtgccgc agctgtgccg 850
gtgcgagggg cggctgctgt actgcgaggc gctcaacctc accgaggcgc 900
cccacaacct gtccggcctg ctgggcttgt ccctgcgcta caacagcctc 950
tcggagctgc gcgccggcca gttcacgggg ttaatgcagc tcacgtggct 1000
ctatctggat cacaatcaca tctgctccgt gcagggggac gcctttcaga 1050
aactgcgccg agttaaggaa ctcacgctga gttccaacca gatcaccaa 1100
ctgcccaca ccacctccg gcccatgcc aacctgcga gcgtggacct 1150
ctcgtaaac aagctgcagg cgctcgcgc cgacctctc cacgggctgc 1200
ggaagctcac cacgctgcat atgcgggcca acgccatcca gtttgtgcc 1250
gtgcgcatct tccaggactg ccgcagcctc aagtttctcg acatcggata 1300
caatcagctc aagagtctgg cgcgcaactc tttcgccggc ttgtttaagc 1350
tcaccgagct gcacctcgag cacaacgact tggtaaggt gaacttcgcc 1400
cacttcccgc gcctcatctc cctgcactcg ctctgcctgc ggaggaacaa 1450
gggtggccatt gtggtcagct cgctggactg ggtttggaac ctggagaaaa 1500
tggacttgtc gggcaacgag atcgagtaca tggagcccca tgtgttcgag 1550
accgtgccgc acctgcagtc cctgcagctg gactccaacc gcctcaccta 1600
catcgagccc cggatcctca actcttgga gtccttgaca agcatcacc 1650
tgcccgga cctgtgggat tgcgggcgc acgtgtgtgc ctagcctcg 1700
tggtcagca acttcaggg gcgctacgat ggcaacttc agtgcgccag 1750
cccggagtac gcacagggcg aggacgtcct ggacgccgtg tacgccttc 1800
acctgtgcga ggatggggcc gagcccacca gcggccacct gctctcggc 1850
gtcaccaacc gcagtgatct ggggccccct gccagctcgg ccaccacgt 1900
cgcgagcggc ggggaggggc agcacgacgg cacattcgag cctgccaccg 1950
tggtcttcc aggcggcgag cacgccgaga acgccgtgca gatccacaag 2000
gtggtcacgg gcaccatggc cctcatcttc tccttcctca tcgtggtcct 2050
gggtgctctac gtgtcctgga agtgtttccc agccagcctc aggcagctca 2100
gacagtgctt tgtcacgcag cgcaggaagc aaaagcagaa acagaccatg 2150

catcagatgg ctgccatgtc tgcccaggaa tactacgttg attacaaacc 2200
gaaccacatt gagggagccc tggatgatcat caacgagtat ggctcgtgta 2250
cctgccacca gcagcccgcg agggaaatgcg aggtgtgatt gtcccagtgg 2300
ctctcaaccc atgcgctacc aaatacgcct gggcagccgg gacgggccgg 2350
cgggcaccag gctgggggtct ccttgtctgt gctctgatat gctccttgac 2400
tgaaacttta aggggatctc tcccagagac ttgacatttt agctttattg 2450
tgtcttaaaa acaaaagcga attaaaacac aacaaaaaac cccacccac 2500
aaccttcagg acagtctatc ttaaatttca tatgagaact ccttcctccc 2550
tttgaagatc tgtccatatt caggaatctg agagtgtaaa aaagggtggc 2600
ataagacaga gagagaataa tcgtgctttg ttttatgcta ctccctccac 2650
cctgcccattg attaaacatc atgtatgtag aagatcttaa gtccatacgc 2700
atttcatgaa gaaccattgg aaagaggaat ctgcaatctg ggagcttaag 2750
agcaaattgat gaccatagaa agctatgttc ttactttgtg tgtgtgtctg 2800
tatgtttctg cgttgtgtgt ctttgtaggc aagcaaacgt tgtctacaca 2850
aacgggaatt tagctcacat catttcatgc ccctgtgcct ctagctctgg 2900
agattggtgg ggggaggtgg ggggaaacgg caggaataag ggaaagtgg 2950
agttttaact aaggttttgt aacacttgaa atcttttctt tctcaaatta 3000
attatcttta agcttcaaga aacttgctct gaccctcta agcaaactac 3050
taagcattta aaagagaatc taatttttaa aggtgtagca cctttttttt 3100
tattcttccc acagaggggtg ctaatctcat tatgctgtgc tatctgaaaa 3150
gaacttaagg ccacaattca cgtctcgtcc tgggcattgt gatggattga 3200
ccctccattt gcagtacctt cccagctgat taaagttcag cagtggattt 3250
gaggtttttc gaatatatat atagaaaaaa agtcttttca catgacaaat 3300
gacactctca caccagtctt agccctagta gttttttagg ttggaccaga 3350
ggaagcagg taaatgagac ctgtcctctg ctgcactcag aaaaaatagg 3400
cagtccctga tgctcagatc ttagccttga tattaatagt tgagaccacc 3450
taccacaat gcagcctata ctccaagac tacaaaagta ccatcgcaaa 3500
ggaaagggtta ttccagtaaa aggaaatagt tttctcaacc atttaaaaaat 3550

attcttctga actcatcaaa gtagaagagc ccccaacctt ttctctctgc 3600
 cttcaagaag gcagacattt ggtatgattt agcatcaaca acacatttat 3650
 gagtatatgt aagtaatcag aggggcaaatt gccacttggt attcctccca 3700
 agttttccaa gcaagtacac acagatctct ggtaggatta ggggccactt 3750
 gtgtttccgg cttattttag tcgacttgtc agcaagtttg atgcctagtc 3800
 tatctgacat ggcccagtag aacagggcat tgatggatca catgagatgg 3850
 tagaaggaac atcatcacat acccctctca cagagaaaat tatcaaagaa 3900
 ccagaaatta tatctgtttt ggagcaagag tgtcataatg tttcagggta 3950
 gtcaaaataa acataaatta tctcctctag atgagtggcg atgttggctg 4000
 atttgggtct gccattgaca gaatgtcaaa taaaaaggaa ttagctagaa 4050
 tatgaccatt aaatgtgctt ctgaaatata ttttgagata ggtttagaat 4100
 gtca 4104

<210> 278

<211> 522

<212> PRT

<213> Homo sapiens

<400> 278

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asp | Phe | Leu | Leu | Leu | Gly | Leu | Cys | Leu | Tyr | Trp | Leu | Leu | Arg |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Arg | Pro | Ser | Gly | Val | Val | Leu | Cys | Leu | Leu | Gly | Ala | Cys | Phe | Gln |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Met | Leu | Pro | Ala | Ala | Pro | Ser | Gly | Cys | Pro | Gln | Leu | Cys | Arg | Cys |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Glu | Gly | Arg | Leu | Leu | Tyr | Cys | Glu | Ala | Leu | Asn | Leu | Thr | Glu | Ala |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Pro | His | Asn | Leu | Ser | Gly | Leu | Leu | Gly | Leu | Ser | Leu | Arg | Tyr | Asn |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ser | Leu | Ser | Glu | Leu | Arg | Ala | Gly | Gln | Phe | Thr | Gly | Leu | Met | Gln |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Leu | Thr | Trp | Leu | Tyr | Leu | Asp | His | Asn | His | Ile | Cys | Ser | Val | Gln |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Gly | Asp | Ala | Phe | Gln | Lys | Leu | Arg | Arg | Val | Lys | Glu | Leu | Thr | Leu |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Ser | Ser | Asn | Gln | Ile | Thr | Gln | Leu | Pro | Asn | Thr | Thr | Phe | Arg | Pro |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Pro | Asn | Leu | Arg | Ser | Val | Asp | Leu | Ser | Tyr | Asn | Lys | Leu | Gln | 140 | 145 | 150 |
| Ala | Leu | Ala | Pro | Asp | Leu | Phe | His | Gly | Leu | Arg | Lys | Leu | Thr | Thr | 155 | 160 | 165 |
| Leu | His | Met | Arg | Ala | Asn | Ala | Ile | Gln | Phe | Val | Pro | Val | Arg | Ile | 170 | 175 | 180 |
| Phe | Gln | Asp | Cys | Arg | Ser | Leu | Lys | Phe | Leu | Asp | Ile | Gly | Tyr | Asn | 185 | 190 | 195 |
| Gln | Leu | Lys | Ser | Leu | Ala | Arg | Asn | Ser | Phe | Ala | Gly | Leu | Phe | Lys | 200 | 205 | 210 |
| Leu | Thr | Glu | Leu | His | Leu | Glu | His | Asn | Asp | Leu | Val | Lys | Val | Asn | 215 | 220 | 225 |
| Phe | Ala | His | Phe | Pro | Arg | Leu | Ile | Ser | Leu | His | Ser | Leu | Cys | Leu | 230 | 235 | 240 |
| Arg | Arg | Asn | Lys | Val | Ala | Ile | Val | Val | Ser | Ser | Leu | Asp | Trp | Val | 245 | 250 | 255 |
| Trp | Asn | Leu | Glu | Lys | Met | Asp | Leu | Ser | Gly | Asn | Glu | Ile | Glu | Tyr | 260 | 265 | 270 |
| Met | Glu | Pro | His | Val | Phe | Glu | Thr | Val | Pro | His | Leu | Gln | Ser | Leu | 275 | 280 | 285 |
| Gln | Leu | Asp | Ser | Asn | Arg | Leu | Thr | Tyr | Ile | Glu | Pro | Arg | Ile | Leu | 290 | 295 | 300 |
| Asn | Ser | Trp | Lys | Ser | Leu | Thr | Ser | Ile | Thr | Leu | Ala | Gly | Asn | Leu | 305 | 310 | 315 |
| Trp | Asp | Cys | Gly | Arg | Asn | Val | Cys | Ala | Leu | Ala | Ser | Trp | Leu | Ser | 320 | 325 | 330 |
| Asn | Phe | Gln | Gly | Arg | Tyr | Asp | Gly | Asn | Leu | Gln | Cys | Ala | Ser | Pro | 335 | 340 | 345 |
| Glu | Tyr | Ala | Gln | Gly | Glu | Asp | Val | Leu | Asp | Ala | Val | Tyr | Ala | Phe | 350 | 355 | 360 |
| His | Leu | Cys | Glu | Asp | Gly | Ala | Glu | Pro | Thr | Ser | Gly | His | Leu | Leu | 365 | 370 | 375 |
| Ser | Ala | Val | Thr | Asn | Arg | Ser | Asp | Leu | Gly | Pro | Pro | Ala | Ser | Ser | 380 | 385 | 390 |
| Ala | Thr | Thr | Leu | Ala | Asp | Gly | Gly | Glu | Gly | Gln | His | Asp | Gly | Thr | 395 | 400 | 405 |
| Phe | Glu | Pro | Ala | Thr | Val | Ala | Leu | Pro | Gly | Gly | Glu | His | Ala | Glu | 410 | 415 | 420 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Ala | Val | Gln | Ile | His | Lys | Val | Val | Thr | Gly | Thr | Met | Ala | Leu |
| | | | | 425 | | | | | 430 | | | | | 435 |
| Ile | Phe | Ser | Phe | Leu | Ile | Val | Val | Leu | Val | Leu | Tyr | Val | Ser | Trp |
| | | | | 440 | | | | | 445 | | | | | 450 |
| Lys | Cys | Phe | Pro | Ala | Ser | Leu | Arg | Gln | Leu | Arg | Gln | Cys | Phe | Val |
| | | | | 455 | | | | | 460 | | | | | 465 |
| Thr | Gln | Arg | Arg | Lys | Gln | Lys | Gln | Lys | Gln | Thr | Met | His | Gln | Met |
| | | | | 470 | | | | | 475 | | | | | 480 |
| Ala | Ala | Met | Ser | Ala | Gln | Glu | Tyr | Tyr | Val | Asp | Tyr | Lys | Pro | Asn |
| | | | | 485 | | | | | 490 | | | | | 495 |
| His | Ile | Glu | Gly | Ala | Leu | Val | Ile | Ile | Asn | Glu | Tyr | Gly | Ser | Cys |
| | | | | 500 | | | | | 505 | | | | | 510 |
| Thr | Cys | His | Gln | Gln | Pro | Ala | Arg | Glu | Cys | Glu | Val | | | |
| | | | | 515 | | | | | 520 | | | | | |

<210> 279

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 279

tccgtgcagg gggacgcctt tcagaaactg cgccgagtta aggaac 46

<210> 280

<211> 709

<212> DNA

<213> Homo sapiens

<400> 280

gtgcaaggag ccgaggcgag atgggcgctc tgggcccgggt cctgctgtgg 50

ctgcagctct gcgcactgac ccaggcggtc tccaaactct gggtcccca 100

cacggacttc gacgtcgag ccaactggag ccagaaccgg acccctgcg 150

ccggcgggcg cgcttgagttc ccggcggaaca agatgggtgtc agtcctggtg 200

caagaaggtc acgccgtctc agacatgtc ctgccgctgg atggggaact 250

cgtcctggct tcaggagccg gattcggcgt ctcagacgtg ggctcgcacc 300

tggactgtgg cgcgggcgaa cctgccgtct tccgcgactc tgaccgcttc 350

tcctggcatg acccgcacct gtggcgctct ggggacgagg cacctggcct 400

cttcttcgtg gacgccgagc gcgtgccctg ccgccacgac gacgtcttct 450

ttccgcctag tgctctcttc cgcgtggggc tcggccctgg cgctagcccc 500

gtgctgtgtcc gcagcatctc ggctctgggc cggacgttca cgcgcgacga 550
 ggacctggct gttttcctgg cgtcccgcgc gggccgccta cgcttcacg 600
 ggccgggagc gctgagcgtg ggccccgagg actgcgcgga cccgtcgggc 650
 tgcgtctgcg gcaacgcgga ggcgcagccg tggatctgcg cggccctgct 700
 ccagccct 709

<210> 281
 <211> 229
 <212> PRT
 <213> Homo sapiens

<400> 281
 Met Gly Val Leu Gly Arg Val Leu Leu Trp Leu Gln Leu Cys Ala
 1 5 10 15
 Leu Thr Gln Ala Val Ser Lys Leu Trp Val Pro Asn Thr Asp Phe
 20 25 30
 Asp Val Ala Ala Asn Trp Ser Gln Asn Arg Thr Pro Cys Ala Gly
 35 40 45
 Gly Ala Val Glu Phe Pro Ala Asp Lys Met Val Ser Val Leu Val
 50 55 60
 Gln Glu Gly His Ala Val Ser Asp Met Leu Leu Pro Leu Asp Gly
 65 70 75
 Glu Leu Val Leu Ala Ser Gly Ala Gly Phe Gly Val Ser Asp Val
 80 85 90
 Gly Ser His Leu Asp Cys Gly Ala Gly Glu Pro Ala Val Phe Arg
 95 100 105
 Asp Ser Asp Arg Phe Ser Trp His Asp Pro His Leu Trp Arg Ser
 110 115 120
 Gly Asp Glu Ala Pro Gly Leu Phe Phe Val Asp Ala Glu Arg Val
 125 130 135
 Pro Cys Arg His Asp Asp Val Phe Phe Pro Pro Ser Ala Ser Phe
 140 145 150
 Arg Val Gly Leu Gly Pro Gly Ala Ser Pro Val Arg Val Arg Ser
 155 160 165
 Ile Ser Ala Leu Gly Arg Thr Phe Thr Arg Asp Glu Asp Leu Ala
 170 175 180
 Val Phe Leu Ala Ser Arg Ala Gly Arg Leu Arg Phe His Gly Pro
 185 190 195
 Gly Ala Leu Ser Val Gly Pro Glu Asp Cys Ala Asp Pro Ser Gly

| | | | |
|---|-----|-----|-----|
| | 200 | 205 | 210 |
| Cys Val Cys Gly Asn Ala Glu Ala Gln Pro Trp Ile Cys Ala Ala | | | |
| | 215 | 220 | 225 |

Leu Leu Gln Pro

<210> 282
 <211> 644
 <212> DNA
 <213> Homo sapiens

<400> 282
 atcgcatcaa ttgggagtag catcttcctc atgggaccag tgaaacagct 50
 gaagcgaatg tttgagccta ctggtttgat tgcaactatc atgggtgctgt 100
 tgtgttttgc acttaccctg tgttctgcct tttggtggca taacaaggga 150
 cttgcactta tcttctgcat tttgcagtct ttggcattga cgtggtacag 200
 cctttccttc ataccatttg caagggatgc tgtgaagaag tgttttgccg 250
 tgtgtcttgc ataattcatg gccagtttta tgaagctttg gaaggcacta 300
 tggacagaag ctggtggaca gttttgtaac tatcttcgaa acctctgtct 350
 tacagacatg tgccttttat cttgcagcaa tgtgttgctt gtgattcgaa 400
 catttgaggg ttacttttgg aagcaacaat acattctcga acctgaatgt 450
 cagtagcaca ggatgagaag tgggttctgt atcttgtgga gtggaatctt 500
 cctcatgtac ctgtttcctc tctggatggt gtcccactga attcccatga 550
 atacaaacct attcagcaac agcaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 600
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 644

<210> 283
 <211> 77
 <212> PRT
 <213> Homo sapiens

<400> 283
 Met Gly Pro Val Lys Gln Leu Lys Arg Met Phe Glu Pro Thr Arg
 1 5 10 15
 Leu Ile Ala Thr Ile Met Val Leu Leu Cys Phe Ala Leu Thr Leu
 20 25 30
 Cys Ser Ala Phe Trp Trp His Asn Lys Gly Leu Ala Leu Ile Phe
 35 40 45
 Cys Ile Leu Gln Ser Leu Ala Leu Thr Trp Tyr Ser Leu Ser Phe
 50 55 60

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Pro | Phe | Ala | Arg | Asp | Ala | Val | Lys | Lys | Cys | Phe | Ala | Val | Cys |
| | | | | 65 | | | | | 70 | | | | | 75 |

Leu Ala

<210> 284
 <211> 2623
 <212> DNA
 <213> Homo sapiens

<400> 284
 ttgagcgcag gtgagctcct ggcgcgttccg ggggcgttcc tccagtcacc 50
 ctcccgccgt taccgcggc ggcgccgagg gagtctctc cagaccctcc 100
 ctcccgttgc tccaaactaa tacggactga acggatcgct gcgaggggtgg 150
 gagagaaaat tagggggaga aaggacagag agagcaacta ccatccatag 200
 ccagatagat tatcttacac tgaactgac aagtactttg aaaatgactt 250
 cgaaatttat cttggtgtcc ttcatacttg ctgcactgag tctttcaacc 300
 accttttctc tccaaactaga ccagcaaaag gttctactag tttcttttga 350
 tggattccgt tgggattact tatataaagt tccaacgccc cattttcatt 400
 atattatgaa atatggtgtt cacgtgaagc aagtactaa tgtttttatt 450
 acaaaaacct accctaacca ttatactttg gtaactggcc tctttgcaga 500
 gaatcatggg attgttgcaa atgatatgtt tgatcctatt cggaacaaat 550
 ctttctcctt ggatcacatg aatatattatg attccaagtt ttgggaagaa 600
 gcgacaccaa tatggatcac aaaccagagg gcaggacata ctagtgggtgc 650
 agccatgtgg cccggaacag atgtaaaaat acataagcgc tttcctactc 700
 attacatgcc ttacaatgag tcagtttcat ttgaagatag agttgccaaa 750
 attgttgaat gggttacgtc aaaagagccc ataaatcttg gtcttctcta 800
 ttgggaagac cctgatgaca tgggccacca tttgggacct gacagtccgc 850
 tcatggggcc tgtcatttca gatattgaca agaagtagg atatctcata 900
 caaatgctga aaaaggcaaa gttgtggaac actctgaacc taatcatcac 950
 aagtgatcat ggaatgacgc agtgctctga ggaaagggtta atagaacttg 1000
 accagtacct ggataaagac cactataccc tgattgatca atctccagta 1050
 gcagccatct tgccaaaaga aggtaaattt gatgaagtct atgaagcact 1100

aactcacgct catcctaatc ttactgttta caaaaaagaa gacgttccag 1150
aaaggtggca ttacaaatac aacagtcgaa ttcaaccaat catagcagtg 1200
gctgatgaag ggtggcacat ttacagaat aagtcagatg actttctgtt 1250
aggcaaccac ggttacgata atgcgttagc agatatgcat ccaatatttt 1300
tagcccatgg tctgccttc agaaagaatt tctcaaaaga agccatgaac 1350
tccacagatt tgtacccact actatgccac ctctcaata tcaactgccat 1400
gccacacaat ggatcattct ggaatgtcca ggatctgctc aattcagcaa 1450
tgccaagggg ggtcccttat acacagagta ctatactcct ccctggtagt 1500
gttaaaccag cagaatatga ccaagagggg tcataccctt atttcatagg 1550
ggtctctctt ggcagcatta tagtgattgt attttttgta attttcatta 1600
agcatttaat tcacagtcaa atacctgcct tacaagatat gcatgctgaa 1650
atagctcaac cattattaca agcctaattgt tactttgaag tggatttgca 1700
tattgaagtg gagattccat aattatgtca gtgtttaaag gtttcaaatt 1750
ctgggaaacc agttccaaac atctgcagaa accattaagc agttacatat 1800
ttaggtatac acacacacac acacacacac atacacacac acggaccaa 1850
atacttacac ctgcaaagga ataaagatgt gagagtatgt ctccattgtt 1900
cactgtagca tagggataga taagatcctg ctttatttgg acttggcgca 1950
gataatgtat atatttagca actttgcact atgtaaagta ctttatatat 2000
tgcactttaa atttctctcc tgatgggtac tttaatttga aatgcacttt 2050
atggacagtt atgtcttata acttgattga aaatgacaac tttttgcacc 2100
catgtcacag aatacttggt acgcattggt caaactgaag gaaatttcta 2150
ataatcccga ataataaaca tagaaatcta tctccataaa ttgagagaag 2200
aagaaggtga taagtgttga aaattaaatg tgataacctt tgaaccttga 2250
attttgga tgtattccca acagcagaat gcaactgtgg gcatttcttg 2300
tcttatttct ttccagagaa cgtgggtttc atttattttt ccctcaaaag 2350
agagtcaa atactgacagat tcgttctaaa tatattgttt ctgtcataaa 2400
attattgtga tttctgatg agtcatatta ctgtgatttt cataataatg 2450
aagacaccat gaatatactt ttcttctata tagttcagca atggcctgaa 2500
tagaagcaac caggcaccat ctgagcaatg ttttctcttg tttgtaatta 2550

tttgctcctt tgaaaattaa atcactatta attacattaa aaatcaaatt 2600

ggataaaaaa aaaaaaaaaa aaa 2623

<210> 285

<211> 477

<212> PRT

<213> Homo sapiens

<400> 285

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Thr | Ser | Lys | Phe | Ile | Leu | Val | Ser | Phe | Ile | Leu | Ala | Ala | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Leu | Ser | Thr | Thr | Phe | Ser | Leu | Gln | Leu | Asp | Gln | Gln | Lys | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Val | Ser | Phe | Asp | Gly | Phe | Arg | Trp | Asp | Tyr | Leu | Tyr | Lys |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Pro | Thr | Pro | His | Phe | His | Tyr | Ile | Met | Lys | Tyr | Gly | Val | His |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Lys | Gln | Val | Thr | Asn | Val | Phe | Ile | Thr | Lys | Thr | Tyr | Pro | Asn |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Tyr | Thr | Leu | Val | Thr | Gly | Leu | Phe | Ala | Glu | Asn | His | Gly | Ile |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Ala | Asn | Asp | Met | Phe | Asp | Pro | Ile | Arg | Asn | Lys | Ser | Phe | Ser |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Asp | His | Met | Asn | Ile | Tyr | Asp | Ser | Lys | Phe | Trp | Glu | Glu | Ala |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Pro | Ile | Trp | Ile | Thr | Asn | Gln | Arg | Ala | Gly | His | Thr | Ser | Gly |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ala | Met | Trp | Pro | Gly | Thr | Asp | Val | Lys | Ile | His | Lys | Arg | Phe |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Thr | His | Tyr | Met | Pro | Tyr | Asn | Glu | Ser | Val | Ser | Phe | Glu | Asp |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Val | Ala | Lys | Ile | Val | Glu | Trp | Phe | Thr | Ser | Lys | Glu | Pro | Ile |
| | | | | 170 | | | | | 175 | | | | | 180 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Leu | Gly | Leu | Leu | Tyr | Trp | Glu | Asp | Pro | Asp | Asp | Met | Gly | His |
| | | | | 185 | | | | | 190 | | | | | 195 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Leu | Gly | Pro | Asp | Ser | Pro | Leu | Met | Gly | Pro | Val | Ile | Ser | Asp |
| | | | | 200 | | | | | 205 | | | | | 210 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Asp | Lys | Lys | Leu | Gly | Tyr | Leu | Ile | Gln | Met | Leu | Lys | Lys | Ala |
| | | | | 215 | | | | | 220 | | | | | 225 |

Lys Leu Trp Asn Thr Leu Asn Leu Ile Ile Thr Ser Asp His Gly

| 230 | | | | | | | | | | 235 | | | | | 240 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Met | Thr | Gln | Cys | Ser | Glu | Glu | Arg | Leu | Ile | Glu | Leu | Asp | Gln | Tyr | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Leu | Asp | Lys | Asp | His | Tyr | Thr | Leu | Ile | Asp | Gln | Ser | Pro | Val | Ala | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Ala | Ile | Leu | Pro | Lys | Glu | Gly | Lys | Phe | Asp | Glu | Val | Tyr | Glu | Ala | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Leu | Thr | His | Ala | His | Pro | Asn | Leu | Thr | Val | Tyr | Lys | Lys | Glu | Asp | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Val | Pro | Glu | Arg | Trp | His | Tyr | Lys | Tyr | Asn | Ser | Arg | Ile | Gln | Pro | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| Ile | Ile | Ala | Val | Ala | Asp | Glu | Gly | Trp | His | Ile | Leu | Gln | Asn | Lys | | | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | | | |
| Ser | Asp | Asp | Phe | Leu | Leu | Gly | Asn | His | Gly | Tyr | Asp | Asn | Ala | Leu | | | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | | | |
| Ala | Asp | Met | His | Pro | Ile | Phe | Leu | Ala | His | Gly | Pro | Ala | Phe | Arg | | | | | |
| | | | | 350 | | | | | 355 | | | | | 360 | | | | | |
| Lys | Asn | Phe | Ser | Lys | Glu | Ala | Met | Asn | Ser | Thr | Asp | Leu | Tyr | Pro | | | | | |
| | | | | 365 | | | | | 370 | | | | | 375 | | | | | |
| Leu | Leu | Cys | His | Leu | Leu | Asn | Ile | Thr | Ala | Met | Pro | His | Asn | Gly | | | | | |
| | | | | 380 | | | | | 385 | | | | | 390 | | | | | |
| Ser | Phe | Trp | Asn | Val | Gln | Asp | Leu | Leu | Asn | Ser | Ala | Met | Pro | Arg | | | | | |
| | | | | 395 | | | | | 400 | | | | | 405 | | | | | |
| Val | Val | Pro | Tyr | Thr | Gln | Ser | Thr | Ile | Leu | Leu | Pro | Gly | Ser | Val | | | | | |
| | | | | 410 | | | | | 415 | | | | | 420 | | | | | |
| Lys | Pro | Ala | Glu | Tyr | Asp | Gln | Glu | Gly | Ser | Tyr | Pro | Tyr | Phe | Ile | | | | | |
| | | | | 425 | | | | | 430 | | | | | 435 | | | | | |
| Gly | Val | Ser | Leu | Gly | Ser | Ile | Ile | Val | Ile | Val | Phe | Phe | Val | Ile | | | | | |
| | | | | 440 | | | | | 445 | | | | | 450 | | | | | |
| Phe | Ile | Lys | His | Leu | Ile | His | Ser | Gln | Ile | Pro | Ala | Leu | Gln | Asp | | | | | |
| | | | | 455 | | | | | 460 | | | | | 465 | | | | | |
| Met | His | Ala | Glu | Ile | Ala | Gln | Pro | Leu | Leu | Gln | Ala | | | | | | | | |
| | | | | 470 | | | | | 475 | | | | | | | | | | |

<210> 286
 <211> 1337
 <212> DNA
 <213> Homo sapiens

<400> 286
 ggattttttgt gatccgcgat tcgctccac gggcgggacc tttgtaactg 50

cgggaggccc aggcacaggcc caccctgcgg ggcgggaggc agccggggtg 100
 agggaggtga agaaaccaag acgcagagag gccaagcccc ttgccttggg 150
 tcacacagcc aaaggaggca gagccagaac tcacaaccag atccagaggc 200
 aacagggaca tggccacctg ggacgaaaag gcagtcaccc gcaggggccaa 250
 ggtggctccc gctgagagga tgagcaagtt cttaaggcac ttcacggtcg 300
 tgggagacga ctaccatgcc tggaacatca actacaagaa atgggagaat 350
 gaagaggagg agggaggagga ggagcagcca ccaccacac cagtctcagg 400
 cgaggaaggc agagctgcag cccctgacgt tgcccctgcc cctggccccg 450
 caccaggggc ccccttgac ttcaggggca tgttgaggaa actgttcagc 500
 tcccacaggt ttcaggtcat catcatctgc ttggtggttc tggatgccct 550
 cctggtgctt gctgagctca tcctggacct gaagatcatc cagcccgaca 600
 agaataacta tgctgccatg gtattccact acatgagcat caccatcttg 650
 gtctttttta tgatggagat catctttaaa ttatttgtct tccgcctgag 700
 ttctttcacc acaagtttga gatcctggat gcccgctcgtg gtggtggtct 750
 cattcatcct ggacattgtc ctctgttcc aggagcacca gtttgaggct 800
 ctgggcctgc tgattctgct ccggctgtgg cgggtggccc ggatcatcaa 850
 tgggattatc atctcagtta agacacgttc agaacggcaa ctcttaaggt 900
 taaaacagat gaatgtacaa ttggccgcca agattcaaca ccttgagtgc 950
 agctgctctg agaagccctt ggactgatga gtttgctgta tcaacctgta 1000
 aggagaagct ctctccggat ggctatggga atgaaagaat ccgacttcta 1050
 ctctcacaca gccaccgtga aagtcttgga gtaaaatgtg ctgtgtacag 1100
 aagagagaga aggaagcagg ctggcatgtt cactgggctg gtgttacgac 1150
 agagaacctg acagtcactg gccagttatc acttcagatt acaaatacaca 1200
 cagagcatct gcctgttttc aatcacaaga gaacaaaacc aaaatctata 1250
 aagatattct gaaaatatga cagaatttga caaataaaag cataaacgtg 1300
 taaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaa 1337

<210> 287
 <211> 255
 <212> PRT
 <213> Homo sapiens

<400> 287

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Thr | Trp | Asp | Glu | Lys | Ala | Val | Thr | Arg | Arg | Ala | Lys | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ala | Pro | Ala | Glu | Arg | Met | Ser | Lys | Phe | Leu | Arg | His | Phe | Thr | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Val | Gly | Asp | Asp | Tyr | His | Ala | Trp | Asn | Ile | Asn | Tyr | Lys | Lys | Trp |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Glu | Asn | Glu | Glu | Glu | Glu | Glu | Glu | Glu | Glu | Gln | Pro | Pro | Pro | Thr |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Pro | Val | Ser | Gly | Glu | Glu | Gly | Arg | Ala | Ala | Ala | Pro | Asp | Val | Ala |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Pro | Ala | Pro | Gly | Pro | Ala | Pro | Arg | Ala | Pro | Leu | Asp | Phe | Arg | Gly |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Met | Leu | Arg | Lys | Leu | Phe | Ser | Ser | His | Arg | Phe | Gln | Val | Ile | Ile |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ile | Cys | Leu | Val | Val | Leu | Asp | Ala | Leu | Leu | Val | Leu | Ala | Glu | Leu |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Ile | Leu | Asp | Leu | Lys | Ile | Ile | Gln | Pro | Asp | Lys | Asn | Asn | Tyr | Ala |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ala | Met | Val | Phe | His | Tyr | Met | Ser | Ile | Thr | Ile | Leu | Val | Phe | Phe |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Met | Met | Glu | Ile | Ile | Phe | Lys | Leu | Phe | Val | Phe | Arg | Leu | Ser | Ser |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Phe | Thr | Thr | Ser | Leu | Arg | Ser | Trp | Met | Pro | Val | Val | Val | Val | Val |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Ser | Phe | Ile | Leu | Asp | Ile | Val | Leu | Leu | Phe | Gln | Glu | His | Gln | Phe |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Glu | Ala | Leu | Gly | Leu | Leu | Ile | Leu | Leu | Arg | Leu | Trp | Arg | Val | Ala |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Arg | Ile | Ile | Asn | Gly | Ile | Ile | Ile | Ser | Val | Lys | Thr | Arg | Ser | Glu |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Arg | Gln | Leu | Leu | Arg | Leu | Lys | Gln | Met | Asn | Val | Gln | Leu | Ala | Ala |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Lys | Ile | Gln | His | Leu | Glu | Phe | Ser | Cys | Ser | Glu | Lys | Pro | Leu | Asp |
| | | | | 245 | | | | | 250 | | | | | 255 |

<210> 288

<211> 3334

<212> DNA

<213> Homo sapiens

<400> 288

cggctcgagc tcgagccgaa tcggctcgag gggcagtgga gcacccagca 50
ggccgccaac atgctctgtc tgtgcctgta cgtgccggtc atcggggaag 100
cccagaccga gttccagtac tttgagtcga aggggctccc tgccgagctg 150
aagtccattt tcaagctcag tgtcttcac ccctcccagg aattctccac 200
ctaccgccag tggaagcaga aaattgtaca agctggagat aaggaccttg 250
atgggcagct agactttgaa gaatttgtcc attatctcca agatcatgag 300
aagaagctga ggctgggtgtt taagattttg gacaaaaaga atgatggacg 350
cattgacgcg caggagatca tgcagtccct gcgggacttg ggagtcaaga 400
tatctgaaca gcaggcagaa aaaattctca agagcatgga taaaaacggc 450
acgatgacca tcgactggaa cgagtggaga gactaccacc tcctccaccc 500
cgtggaaaac atccccgaga tcatcctcta ctggaagcat tccacgatct 550
ttgatgtggg tgagaatcta acggtcccgg atgagttcac agtggaggag 600
aggcagacgg ggatgtggtg gagacacctg gtggcaggag gtggggcagg 650
ggccgtatcc agaacctgca cggccccctt ggacaggctc aagggtgctca 700
tgcaggtcca tgcctccgc agcaacaaca tgggcatcgt tgggtggcttc 750
actcagatga ttcgagaagg aggggccagg tcaactctggc ggggcaatgg 800
catcaacgtc ctcaaaattg cccccgaatc agccatcaaa ttcattggcct 850
atgagcagat caagcgctt gttggtagt accaggagac tctgaggatt 900
cacgagaggc ttgtggcagg gtccttggca ggggcatcg cccagagcag 950
catctacca atggaggtcc tgaagacctg gatggcgctg cggaagacag 1000
gccagtactc aggaatgctg gactgcgcca ggaggatcct ggccagagag 1050
ggggtggccg ccttctacaa aggctatgtc cccaacatgc tgggcatcat 1100
cccctatgcc ggcatcgacc ttgcagtcta cgagacgctc aagaatgcct 1150
ggctgcagca ctatgcagt aacagcgcg accccggcgt gtttgtgctc 1200
ctggcctgtg gcaccatgtc cagtacctgt ggccagctgg ccagctaccc 1250
cctggcccta gtcaggacct ggatgcaggc gcaagcctct attgagggcg 1300
ctccggagggt gaccatgagc agcctcttca aacatatacct gcggaccgag 1350
ggggccttcg ggctgtacag ggggctggcc cccaacttca tgaaggatcat 1400

cccagctgtg agcatcagct acgtggtcta cgagaacctg aagatcaccc 1450
tgggcgtgca gtcgcggtga cggggggagg gccgcccggc agtggactcg 1500
ctgatcctgg gccgcagcct ggggtgtgca gccatctcat tctgtgaatg 1550
tgccaacact aagctgtctc gagccaagct gtgaaaacct tagacgcacc 1600
cgcagggagg gtggggagag ctggcaggcc cagggcttgt cctgctgacc 1650
ccagcagacc ctctgtttgg ttccagcgaa gaccacaggc attccttagg 1700
gtccagggtc agcaggctcc gggctcacat gtgtaaggac aggacatttt 1750
ctgcagtgcc tgccaatagt gagcttggag cctggaggcc ggcttagttc 1800
ttccatttca cccttgacgc cagctgttgg ccacggcccc tgccctctgg 1850
tctgccgtgc atctccctgt gccctcttgc tgccctgctg tctgctgagg 1900
taaggtggga ggagggtac agcccacatc ccaccccctc gtccaatccc 1950
ataatccatg atgaaagggt aggtcacgtg gcctcccagg cctgacttcc 2000
caacctacag cattgacgcc aacttggctg tgaaggaaga ggaaaggatc 2050
tggccttgtg gtcactggca tctgagccct gctgatggct ggggctctcg 2100
ggcatgcttg ggagtgcagg gggctcgggc tgccctggcct ggctgcacag 2150
aaggcaagtg ctggggctca tgggtgctctg agctggcctg gaccctgtca 2200
ggatggggcc cacctcagaa ccaaactcac tgtccccact gtggcatgag 2250
ggcagtggag caccatgttt gagggcgaag ggagagcgt ttgtgtgttc 2300
tggggaggga aggaaaagggt gttggaggcc ttaattatgg actgttggga 2350
aaagggtttt gtccagaagg acaagccgga caaatgagcg acttctgtgc 2400
ttccagagga agacgaggga gcaggagctt ggctgactgc tcagagtctg 2450
ttctgacgcc ctgggggttc ctgtccaacc ccagcagggg cgcagcggga 2500
ccagccccac attccacttg tgtcactgct tggaacctat ttattttgta 2550
tttatttgaa cagagtatat tcctaactat ttttatagat ttgtttaatt 2600
aatagcttgt catTTTTcaag ttcatTTTT attcatattt atgttcatgg 2650
ttgattgtac cttcccaagc ccgcccagtg ggatgggagg aggaggagaa 2700
ggggggcctt gggccgtgc agtcacatct gtccagagaa attccttttg 2750
ggactggagg cagaaaagcg gccagaaggc agcagccctg gtccttttcc 2800

```

tttggcaggt tggggaaggg cttgccccca gccttaggat ttcagggttt 2850
gactgggggc gtggagagag agggaggaac ctcaataacc ttgaaggtgg 2900
aatccagtta tttcctgcgc tgcgaggggt tctttatttc actcttttct 2950
gaatgtcaag gcagtgaggt gcctctcact gtgaatttgt ggtgggcggg 3000
ggctggagga gaggggtgggg ggctggctcc gtccctccca gccttctgct 3050
gcccttgctt aacaatgccg gccaaactggc gacctcacgg ttgcacttcc 3100
attccaccag aatgacctga tgaggaaatc ttcaatagga tgcaaagatc 3150
aatgcaaaaa ttgttatata tgaacatata actggagtcg tcaaaaagca 3200
aattaagaaa gaattggacg ttagaagttg tcatttaaag cagccttcta 3250
ataaagttgt ttcaaagctg aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 3300
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 3334

```

```

<210> 289
<211> 469
<212> PRT
<213> Homo sapiens

```

```

<400> 289
Met Leu Cys Leu Cys Leu Tyr Val Pro Val Ile Gly Glu Ala Gln
 1             5             10             15

Thr Glu Phe Gln Tyr Phe Glu Ser Lys Gly Leu Pro Ala Glu Leu
          20             25             30

Lys Ser Ile Phe Lys Leu Ser Val Phe Ile Pro Ser Gln Glu Phe
          35             40             45

Ser Thr Tyr Arg Gln Trp Lys Gln Lys Ile Val Gln Ala Gly Asp
          50             55             60

Lys Asp Leu Asp Gly Gln Leu Asp Phe Glu Glu Phe Val His Tyr
          65             70             75

Leu Gln Asp His Glu Lys Lys Leu Arg Leu Val Phe Lys Ile Leu
          80             85             90

Asp Lys Lys Asn Asp Gly Arg Ile Asp Ala Gln Glu Ile Met Gln
          95             100            105

Ser Leu Arg Asp Leu Gly Val Lys Ile Ser Glu Gln Gln Ala Glu
          110            115            120

Lys Ile Leu Lys Ser Met Asp Lys Asn Gly Thr Met Thr Ile Asp
          125            130            135

Trp Asn Glu Trp Arg Asp Tyr His Leu Leu His Pro Val Glu Asn
          140            145            150

```

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Pro | Glu | Ile | Ile | Leu | Tyr | Trp | Lys | His | Ser | Thr | Ile | Phe | Asp | 155 | 160 | 165 |
| Val | Gly | Glu | Asn | Leu | Thr | Val | Pro | Asp | Glu | Phe | Thr | Val | Glu | Glu | 170 | 175 | 180 |
| Arg | Gln | Thr | Gly | Met | Trp | Trp | Arg | His | Leu | Val | Ala | Gly | Gly | Gly | 185 | 190 | 195 |
| Ala | Gly | Ala | Val | Ser | Arg | Thr | Cys | Thr | Ala | Pro | Leu | Asp | Arg | Leu | 200 | 205 | 210 |
| Lys | Val | Leu | Met | Gln | Val | His | Ala | Ser | Arg | Ser | Asn | Asn | Met | Gly | 215 | 220 | 225 |
| Ile | Val | Gly | Gly | Phe | Thr | Gln | Met | Ile | Arg | Glu | Gly | Gly | Ala | Arg | 230 | 235 | 240 |
| Ser | Leu | Trp | Arg | Gly | Asn | Gly | Ile | Asn | Val | Leu | Lys | Ile | Ala | Pro | 245 | 250 | 255 |
| Glu | Ser | Ala | Ile | Lys | Phe | Met | Ala | Tyr | Glu | Gln | Ile | Lys | Arg | Leu | 260 | 265 | 270 |
| Val | Gly | Ser | Asp | Gln | Glu | Thr | Leu | Arg | Ile | His | Glu | Arg | Leu | Val | 275 | 280 | 285 |
| Ala | Gly | Ser | Leu | Ala | Gly | Ala | Ile | Ala | Gln | Ser | Ser | Ile | Tyr | Pro | 290 | 295 | 300 |
| Met | Glu | Val | Leu | Lys | Thr | Arg | Met | Ala | Leu | Arg | Lys | Thr | Gly | Gln | 305 | 310 | 315 |
| Tyr | Ser | Gly | Met | Leu | Asp | Cys | Ala | Arg | Arg | Ile | Leu | Ala | Arg | Glu | 320 | 325 | 330 |
| Gly | Val | Ala | Ala | Phe | Tyr | Lys | Gly | Tyr | Val | Pro | Asn | Met | Leu | Gly | 335 | 340 | 345 |
| Ile | Ile | Pro | Tyr | Ala | Gly | Ile | Asp | Leu | Ala | Val | Tyr | Glu | Thr | Leu | 350 | 355 | 360 |
| Lys | Asn | Ala | Trp | Leu | Gln | His | Tyr | Ala | Val | Asn | Ser | Ala | Asp | Pro | 365 | 370 | 375 |
| Gly | Val | Phe | Val | Leu | Leu | Ala | Cys | Gly | Thr | Met | Ser | Ser | Thr | Cys | 380 | 385 | 390 |
| Gly | Gln | Leu | Ala | Ser | Tyr | Pro | Leu | Ala | Leu | Val | Arg | Thr | Arg | Met | 395 | 400 | 405 |
| Gln | Ala | Gln | Ala | Ser | Ile | Glu | Gly | Ala | Pro | Glu | Val | Thr | Met | Ser | 410 | 415 | 420 |
| Ser | Leu | Phe | Lys | His | Ile | Leu | Arg | Thr | Glu | Gly | Ala | Phe | Gly | Leu | 425 | 430 | 435 |

Tyr Arg Gly Leu Ala Pro Asn Phe Met Lys Val Ile Pro Ala Val
440 445 450

Ser Ile Ser Tyr Val Val Tyr Glu Asn Leu Lys Ile Thr Leu Gly
455 460 465

Val Gln Ser Arg

<210> 290
<211> 1658
<212> DNA
<213> Homo sapiens

<400> 290
ggaaggcagc ggcagctcca ctcagccagt acccagatac gctgggaacc 50
ttccccagcc atggcttccc tggggcagat cctcttctgg agcataatta 100
gcatcatcat tattctggct ggagcaattg cactcatcat tggctttggt 150
atttcaggga gacactccat cacagtcact actgtcgcct cagctgggaa 200
cattggggag gatggaatcc tgagctgcac ttttgaacct gacatcaaac 250
tttctgatat cgtgatacaa tggctgaagg aaggtgtttt aggcttggtc 300
catgagttca aagaaggcaa agatgagctg tcggagcagg atgaaatgtt 350
cagaggccgg acagcagtgt ttgctgatca agtgatagtt ggcaatgcct 400
ctttgctggc gaaaaacgtg caactcacag atgctggcac ctacaaatgt 450
tatatcatca cttctaaagg caaggggaat gctaaccttg agtataaaac 500
tggagccttc agcatgccgg aagtgaatgt ggactataat gccagctcag 550
agaccttgcg gtgtgaggct ccccgatggc tccccagcc cacagtgggc 600
tgggcatccc aagttgacca gggagccaac ttctcggaag tctccaatac 650
cagctttgag ctgaactctg agaatgtgac catgaagggt gtgtctgtgc 700
tctacaatgt tacgatcaac aacacatact cctgtatgat tgaaaatgac 750
attgccaaag caacagggga tatcaaagt acagaatcgg agatcaaaag 800
gaggagtcac ctacagctgc taaactcaaa ggcttctctg tgtgtctctt 850
ctttctttgc catcagctgg gcacttctgc ctctcagccc ttacctgatg 900
ctaaaataat gtgccttggc cacaaaaaag catgcaaagt cattgttaca 950
acagggatct acagaactat ttcaccacca gatatgacct agttttatat 1000
ttctgggagg aaatgaattc atatctagaa gtctggagtg agcaaacaag 1050

agcaagaaac aaaaagaagc caaaagcaga aggctccaat atgaacaaga 1100
 taaatctatc ttcaaagaca tattagaagt tgggaaaata attcatgtga 1150
 actagacaag tgtgttaaga gtgataagta aaatgcacgt ggagacaagt 1200
 gcatccccag atctcaggga cctccccctg cctgtcacct ggggagtgag 1250
 aggacaggat agtgcattgt ctttgtctct gaatttttag ttatatgtgc 1300
 tgtaatgttg ctctgaggaa gccctggaa agtctatccc aacatatcca 1350
 catcttatat tccacaaatt aagctgtagt atgtacccta agacgctgct 1400
 aattgactgc cacttcgcaa ctcaggggcg gctgcatttt agtaatgggt 1450
 caaatgattc actttttatg atgcttccaa aggtgccttg gcttctcttc 1500
 ccaactgaca aatgccaaag ttgagaaaaa tgatcataat tttagcataa 1550
 acagagcagt cggggacacc gattttataa ataaactgag caccttcttt 1600
 ttaaacaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1650
 aaaaaaaaa 1658

<210> 291

<211> 282

<212> PRT

<213> Homo sapiens

<400> 291

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Ser | Leu | Gly | Gln | Ile | Leu | Phe | Trp | Ser | Ile | Ile | Ser | Ile | 1 | 5 | 10 | 15 |
| Ile | Ile | Ile | Leu | Ala | Gly | Ala | Ile | Ala | Leu | Ile | Ile | Gly | Phe | Gly | 20 | 25 | 30 | |
| Ile | Ser | Gly | Arg | His | Ser | Ile | Thr | Val | Thr | Thr | Val | Ala | Ser | Ala | 35 | 40 | 45 | |
| Gly | Asn | Ile | Gly | Glu | Asp | Gly | Ile | Leu | Ser | Cys | Thr | Phe | Glu | Pro | 50 | 55 | 60 | |
| Asp | Ile | Lys | Leu | Ser | Asp | Ile | Val | Ile | Gln | Trp | Leu | Lys | Glu | Gly | 65 | 70 | 75 | |
| Val | Leu | Gly | Leu | Val | His | Glu | Phe | Lys | Glu | Gly | Lys | Asp | Glu | Leu | 80 | 85 | 90 | |
| Ser | Glu | Gln | Asp | Glu | Met | Phe | Arg | Gly | Arg | Thr | Ala | Val | Phe | Ala | 95 | 100 | 105 | |
| Asp | Gln | Val | Ile | Val | Gly | Asn | Ala | Ser | Leu | Arg | Leu | Lys | Asn | Val | 110 | 115 | 120 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Leu | Thr | Asp | Ala | Gly | Thr | Tyr | Lys | Cys | Tyr | Ile | Ile | Thr | Ser | 125 | 130 | 135 |
| Lys | Gly | Lys | Gly | Asn | Ala | Asn | Leu | Glu | Tyr | Lys | Thr | Gly | Ala | Phe | 140 | 145 | 150 |
| Ser | Met | Pro | Glu | Val | Asn | Val | Asp | Tyr | Asn | Ala | Ser | Ser | Glu | Thr | 155 | 160 | 165 |
| Leu | Arg | Cys | Glu | Ala | Pro | Arg | Trp | Phe | Pro | Gln | Pro | Thr | Val | Val | 170 | 175 | 180 |
| Trp | Ala | Ser | Gln | Val | Asp | Gln | Gly | Ala | Asn | Phe | Ser | Glu | Val | Ser | 185 | 190 | 195 |
| Asn | Thr | Ser | Phe | Glu | Leu | Asn | Ser | Glu | Asn | Val | Thr | Met | Lys | Val | 200 | 205 | 210 |
| Val | Ser | Val | Leu | Tyr | Asn | Val | Thr | Ile | Asn | Asn | Thr | Tyr | Ser | Cys | 215 | 220 | 225 |
| Met | Ile | Glu | Asn | Asp | Ile | Ala | Lys | Ala | Thr | Gly | Asp | Ile | Lys | Val | 230 | 235 | 240 |
| Thr | Glu | Ser | Glu | Ile | Lys | Arg | Arg | Ser | His | Leu | Gln | Leu | Leu | Asn | 245 | 250 | 255 |
| Ser | Lys | Ala | Ser | Leu | Cys | Val | Ser | Ser | Phe | Phe | Ala | Ile | Ser | Trp | 260 | 265 | 270 |
| Ala | Leu | Leu | Pro | Leu | Ser | Pro | Tyr | Leu | Met | Leu | Lys | | | | 275 | 280 | |

<210> 292

<211> 1484

<212> DNA

<213> Homo sapiens

<400> 292

```

gaatttgtag aagacagcgg cgttgccatg gcggcgtctc tggggcaggt 50
gttggtctctg gtgctggtgg ccgctctgtg ggggtggcacg cagccgctgc 100
tgaagcgggc ctccgccggc ctgcagcggg ttcattgagcc gacctgggcc 150
cagcagttgc tacaggagat gaagaccctc ttcttgaata ctgagtacct 200
gatgcccttt ctccctcaacc agtgtggatc cttctcttat tacctcacct 250
tggcatcgac agatctgacc ctggctgtgc ccatctgtaa ctctctggct 300
atcatcttca cactgattgt tgggaaggcc cttggagaag atattggtgg 350
aaaacgtaag ttagactact gcgagtgcgg gacgcagctc tgtggatctc 400
gacatacctg tgtagttcc ttcccagaac ccatctcccc agagtgggtg 450

```

```

aggacacggc cttttcccat cctgcccttt cctctgcagc tgttttgctt 500
ccttgtggcc atcagagttc ctttcccctg gacagtcttg agaaagacag 550
aggctgggggt ttgggattga agaccagacc ccatctgagc ctttcctcca 600
gccctgtacc agctcctact ggcctggctg agctcagacc ctcttgattt 650
ctgcctatta tcccaggagc agttgctggc atgggtgctca ccgtgatagg 700
aatttcactc tgcatacaca gctcagtgag taagaccagc gggcaacagt 750
ctaccctttg agtggggcga acccacttcc agctctgctg cctccaggaa 800
gcccctgggc catgaagtgc tggcagtgag cggatggacc tagcacttcc 850
cctctctggc cttagcttcc tcctctctta tggggataac agctacctca 900
tggatcacaa taagagaaca agagtgaag agttttgtaa ctttcaagt 950
ctgttcagct gcgggggattt agcacaggag actctacgct caccctcagc 1000
aacctttctg cccagcagc tctcttctctg ctaacatctc aggctcccag 1050
cccagccacc attactgtgg cctgatctgg actatcatgg tggcagggtc 1100
catggactgc agaactccag ctgcatggaa agggccagct gcagactttg 1150
agccagaaat gcaaacggga ggcctctggg actcagtcag agcgcttttg 1200
ctgaatgagg ggtggaaccg agggaagaag gtgcgtcga gtggcagatg 1250
caggaaatga gctgtctatt agccttgctt gcccaccca tgaggtaggc 1300
agaaatcctc actgccagcc cctcttaaac aggtagagag ctgtgagccc 1350
cagccccacc tgactccagc acacctggcg agtagtagct gtcaataaat 1400
ctatgtaaac agacaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1450
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 1484

```

```

<210> 293
<211> 180
<212> PRT
<213> Homo sapiens

```

```

<400> 293
Met Ala Ala Ser Leu Gly Gln Val Leu Ala Leu Val Leu Val Ala
 1             5             10            15
Ala Leu Trp Gly Gly Thr Gln Pro Leu Leu Lys Arg Ala Ser Ala
          20             25            30
Gly Leu Gln Arg Val His Glu Pro Thr Trp Ala Gln Gln Leu Leu
          35             40            45

```

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gln | Glu | Met | Lys | Thr | Leu | Phe | Leu | Asn | Thr | Glu | Tyr | Leu | Met | Pro | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Phe | Leu | Leu | Asn | Gln | Cys | Gly | Ser | Leu | Leu | Tyr | Tyr | Leu | Thr | Leu | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Ala | Ser | Thr | Asp | Leu | Thr | Leu | Ala | Val | Pro | Ile | Cys | Asn | Ser | Leu | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Ala | Ile | Ile | Phe | Thr | Leu | Ile | Val | Gly | Lys | Ala | Leu | Gly | Glu | Asp | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Ile | Gly | Gly | Lys | Arg | Lys | Leu | Asp | Tyr | Cys | Glu | Cys | Gly | Thr | Gln | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Leu | Cys | Gly | Ser | Arg | His | Thr | Cys | Val | Ser | Ser | Phe | Pro | Glu | Pro | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Ile | Ser | Pro | Glu | Trp | Val | Arg | Thr | Arg | Pro | Phe | Pro | Ile | Leu | Pro | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Phe | Pro | Leu | Gln | Leu | Phe | Cys | Phe | Leu | Val | Ala | Ile | Arg | Val | Pro | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Phe | Pro | Trp | Thr | Val | Trp | Arg | Lys | Thr | Glu | Ala | Gly | Val | Trp | Asp | |
| | | | | 170 | | | | | 175 | | | | | 180 | |

<210> 294
 <211> 1164
 <212> DNA
 <213> Homo sapiens

<400> 294
 cttctgtagg acagtcacca ggccagatcc agaagcctct ctaggctcca 50
 gcttttctctg tggaagatga cagcaattat agcaggaccc tgccaggctg 100
 tcgaaaagat tccgcaataa aacttttgcca gtgggaagta cctagtgaaa 150
 cggcctaaga tgccacttct tctcatgtcc caggcttgag gccctgtggt 200
 ccccatcctt gggagaagtc agctccagca ccatgaaggg catcctcggt 250
 gctgggtatca ctgcagtgtg tggtgcagct gtagaatctc tgagctgcgt 300
 gcagtgtaat tcatgggaaa aatcctgtgt caacagcatt gcctctgaat 350
 gtccctcaca tgccaacacc agctgtatca gtcctcagc cagctcctct 400
 ctagagacac cagtcagatt ataccagaat atgttctgct cagcggagaa 450
 ctgcagtgtg gagacacaca ttacagcctt cactgtccac gtgtctgctg 500
 aagaacactt tcattttgta agccagtgtg gcccaaggaaa ggaatgcagc 550
 aacaccagcg atgccctgga ccctcccctg aagaacgtgt ccagcaacgc 600


```

agagtgcctt gcttggtatg aatctaattg aacttcctgt cgtgggaagc 650
cctggaaatg ctatgaagaa gaacagtgtg tctttctagt tgcagaactt 700
aagaatgaca ttgagtctaa gagtctcgtg ctgaaaggct gttccaacgt 750
cagtaacgcc acctgtcagt tcctgtctgg tgaaaacaag actcttggag 800
gagtcatctt tcgaaagttt gagtgtgcaa atgtaaacag ctttaacccc 850
acgtctgcac caaccacttc ccacaacgtg ggctccaaag cttccctcta 900
cctcttggcc cttgccagcc tccttcttcg gggactgctg ccctgaggtc 950
ctggggctgc actttgccca gcacccatt tctgcttctc tgaggtccag 1000
agcaccacct gcgggtgctga caccctcttt ccctgctctg ccccgtttaa 1050
ctgcccagta agtgggagtc acaggtctcc aggcaatgcc gacagctgcc 1100
ttgttcttca ttattaaagc actggttcat tcactgcaa aaaaaaaaaa 1150
aaaaaaaaaa aaaa 1164

```

```

<210> 295
<211> 237
<212> PRT
<213> Homo sapiens

```

```

<400> 295
Met Lys Gly Ile Leu Val Ala Gly Ile Thr Ala Val Leu Val Ala
 1             5             10             15
Ala Val Glu Ser Leu Ser Cys Val Gln Cys Asn Ser Trp Glu Lys
          20             25             30
Ser Cys Val Asn Ser Ile Ala Ser Glu Cys Pro Ser His Ala Asn
          35             40             45
Thr Ser Cys Ile Ser Ser Ser Ala Ser Ser Ser Leu Glu Thr Pro
          50             55             60
Val Arg Leu Tyr Gln Asn Met Phe Cys Ser Ala Glu Asn Cys Ser
          65             70             75
Glu Glu Thr His Ile Thr Ala Phe Thr Val His Val Ser Ala Glu
          80             85             90
Glu His Phe His Phe Val Ser Gln Cys Cys Gln Gly Lys Glu Cys
          95             100            105
Ser Asn Thr Ser Asp Ala Leu Asp Pro Pro Leu Lys Asn Val Ser
          110            115            120
Ser Asn Ala Glu Cys Pro Ala Cys Tyr Glu Ser Asn Gly Thr Ser
          125            130            135

```

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Cys | Arg | Gly | Lys | Pro | Trp | Lys | Cys | Tyr | Glu | Glu | Glu | Gln | Cys | Val | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Phe | Leu | Val | Ala | Glu | Leu | Lys | Asn | Asp | Ile | Glu | Ser | Lys | Ser | Leu | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Val | Leu | Lys | Gly | Cys | Ser | Asn | Val | Ser | Asn | Ala | Thr | Cys | Gln | Phe | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Leu | Ser | Gly | Glu | Asn | Lys | Thr | Leu | Gly | Gly | Val | Ile | Phe | Arg | Lys | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Phe | Glu | Cys | Ala | Asn | Val | Asn | Ser | Leu | Thr | Pro | Thr | Ser | Ala | Pro | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Thr | Thr | Ser | His | Asn | Val | Gly | Ser | Lys | Ala | Ser | Leu | Tyr | Leu | Leu | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ala | Leu | Ala | Ser | Leu | Leu | Leu | Arg | Gly | Leu | Leu | Pro | | | | |
| | | | | 230 | | | | | 235 | | | | | | |

<210> 296
 <211> 1245
 <212> DNA
 <213> Homo sapiens

<400> 296
 ggcctcgggtt caaacgaccc ggtgggtcta cagcggaagg gagggagcga 50
 aggtaggagg cagggcttgc ctactggcc accctccaa cccaagagc 100
 ccagcccat ggtcccgcc gccggcgcg tgctgtgggt cctgctgctg 150
 aatctgggtc cccggcgcc gggggccaa ggcctgaccc agactccgac 200
 cgaaatgcag cgggtcagtt tacgctttgg gggcccatg accgcagct 250
 accggagcac cgcccgact ggtcttccc ggaagacaag gataatccta 300
 gaggacgaga atgatgcat gcccgacgcc gaccgcctgg ctggaccagc 350
 ggctgccgag ctcttgccg ccacggtgtc caccggcttt agccggtcgt 400
 ccgccattaa cgaggaggat gggctctcag aagagggggg tgtgattaat 450
 gccggaaagg atagcaccag cagagagctt ccagtgca ctcccaatac 500
 agcggggagt tccagcacga gggttatagc caatagtcag gagcctgaaa 550
 tcaggctgac ttcaagcctg ccgcgctccc ccgggaggtc tactgaggac 600
 ctgccaggct cgcaggccac cctgagccag tggccacac ctgggtctac 650
 cccgagccgg tggccgtcac cctcaccac agccatgcca tctcctgagg 700
 atctgcggct ggtgctgatg ccctggggcc cgtggcactg cactgcaag 750

tcgggcacca tgagccggag ccggtctggg aagctgcacg gcctttccgg 800
gcgccttoga gttggggcgc tgagccagct ccgcacggag cacaagcctt 850
gcacctatca acaatgtccc tgcaaccgac ttcgggaaga gtgccccctg 900
gacacaagtc tctgtactga caccaactgt gcctctcaga gcaccaccag 950
taccaggacc accactaccc ccttccccac catccacctc agaagcagtc 1000
ccagcctgcc acccgccagc ccttgcccag ccctggcttt ttggaaacgg 1050
gtcaggattg gcctggagga tatttggaat agcctctctt cagtgttcac 1100
agagatgcaa ccaatagaca gaaaccagag gtaatggcca cttcatccac 1150
atgaggagat gtcagtatct caacctctct tgccctttca atcctagcac 1200
ccactagata tttttagtac agaaaaacaa aactggaaaa cacia 1245

<210> 297
<211> 341
<212> PRT
<213> Homo sapiens

<400> 297
Met Val Pro Ala Ala Gly Ala Leu Leu Trp Val Leu Leu Leu Asn
1 5 10 15
Leu Gly Pro Arg Ala Ala Gly Ala Gln Gly Leu Thr Gln Thr Pro
20 25 30
Thr Glu Met Gln Arg Val Ser Leu Arg Phe Gly Gly Pro Met Thr
35 40 45
Arg Ser Tyr Arg Ser Thr Ala Arg Thr Gly Leu Pro Arg Lys Thr
50 55 60
Arg Ile Ile Leu Glu Asp Glu Asn Asp Ala Met Ala Asp Ala Asp
65 70 75
Arg Leu Ala Gly Pro Ala Ala Ala Glu Leu Leu Ala Ala Thr Val
80 85 90
Ser Thr Gly Phe Ser Arg Ser Ser Ala Ile Asn Glu Glu Asp Gly
95 100 105
Ser Ser Glu Glu Gly Val Val Ile Asn Ala Gly Lys Asp Ser Thr
110 115 120
Ser Arg Glu Leu Pro Ser Ala Thr Pro Asn Thr Ala Gly Ser Ser
125 130 135
Ser Thr Arg Phe Ile Ala Asn Ser Gln Glu Pro Glu Ile Arg Leu
140 145 150
Thr Ser Ser Leu Pro Arg Ser Pro Gly Arg Ser Thr Glu Asp Leu

| | | |
|---|-----|-----|
| 155 | 160 | 165 |
| Pro Gly Ser Gln Ala Thr Leu Ser Gln Trp Ser Thr Pro Gly Ser | | |
| 170 | 175 | 180 |
| Thr Pro Ser Arg Trp Pro Ser Pro Ser Pro Thr Ala Met Pro Ser | | |
| 185 | 190 | 195 |
| Pro Glu Asp Leu Arg Leu Val Leu Met Pro Trp Gly Pro Trp His | | |
| 200 | 205 | 210 |
| Cys His Cys Lys Ser Gly Thr Met Ser Arg Ser Arg Ser Gly Lys | | |
| 215 | 220 | 225 |
| Leu His Gly Leu Ser Gly Arg Leu Arg Val Gly Ala Leu Ser Gln | | |
| 230 | 235 | 240 |
| Leu Arg Thr Glu His Lys Pro Cys Thr Tyr Gln Gln Cys Pro Cys | | |
| 245 | 250 | 255 |
| Asn Arg Leu Arg Glu Glu Cys Pro Leu Asp Thr Ser Leu Cys Thr | | |
| 260 | 265 | 270 |
| Asp Thr Asn Cys Ala Ser Gln Ser Thr Thr Ser Thr Arg Thr Thr | | |
| 275 | 280 | 285 |
| Thr Thr Pro Phe Pro Thr Ile His Leu Arg Ser Ser Pro Ser Leu | | |
| 290 | 295 | 300 |
| Pro Pro Ala Ser Pro Cys Pro Ala Leu Ala Phe Trp Lys Arg Val | | |
| 305 | 310 | 315 |
| Arg Ile Gly Leu Glu Asp Ile Trp Asn Ser Leu Ser Ser Val Phe | | |
| 320 | 325 | 330 |
| Thr Glu Met Gln Pro Ile Asp Arg Asn Gln Arg | | |
| 335 | 340 | |

<210> 298
 <211> 2692
 <212> DNA
 <213> Homo sapiens

<400> 298
 cccgggtcga cccacgcgtc cggggagaaa ggatggccgg cctggcggcg 50
 cggttggtcc tgctagctgg ggcagcggcg ctggcgagcg gctcccaggg 100
 cgaccgtgag ccggtgtacc gcgactgcgt actgcagtgc gaagagcaga 150
 actgctctgg gggcgctctg aatcacttcc gctcccgcca gccaatctac 200
 atgagtctag caggctggac ctgtcgggac gactgtaagt atgagtgtat 250
 gtgggtcacc gttgggctct acctccagga aggtcacaaa gtgcctcagt 300
 tccatggcaa gtggcccttc tcccggttcc tggtctttca agagccggca 350

tgggccgtgg cctcgtttct caatggcctg gccagcctgg tgatgctctg 400
ccgctaccgc accttcgtgc cagcctcctc ccccatgtac cacacctgtg 450
tggccttcgc ctgggtgtcc ctcaatgcat ggttctggtc cacagtcttc 500
cacaccaggg aactgacct cacagagaaa atggactact tctgtgcctc 550
cactgtcatc ctacactcaa tctacctgtg ctgcgtcagg accgtggggc 600
tgcagcacc agctgtggtc agtgccttcc gggctctcct gctgctcatg 650
ctgaccgtgc acgtctccta cctgagcctc atccgcttcg actatggcta 700
caacctggtg gccaacgtgg ctattggcct ggtcaacgtg gtgtggtggc 750
tggcctggtg cctgtggaac cagcggcggc tgcctcacgt gcgcaagtgc 800
gtggtggtgg tcttgctgct gcaggggctg tccctgctcg agctgcttga 850
cttcccaccg ctcttctggg tcttgatgc ccatgccatc tggcacatca 900
gcaccatccc tgtccacgtc ctctttttca gctttctgga agatgacagc 950
ctgtacctgc tgaaggaatc agaggacaag ttcaagctgg actgaagacc 1000
ttggagcgag tctgccccag tggggatcct gccccgccc tgctggcctc 1050
ccttctcccc tcaacccttg agatgatttt ctcttttcaa cttcttgaac 1100
ttggacatga aggatgtggg ccagaatca tgtggccagc ccacccctg 1150
ttggccctca ccagccttgg agtctgttct aggggaaggcc tcccagcatc 1200
tgggactcga gagtgggcag cccctctacc tcttgagct gaactggggt 1250
ggaactgagt gtgttcttag ctctaccggg aggacagctg cctgtttcct 1300
ccccaccagc ctctcccca catccccagc tgcctggctg ggtcctgaag 1350
ccctctgtct acctgggaga ccagggaacca caggccttag ggatacaggg 1400
gggtcccttc tgttaccacc cccaccctc ctccaggaca ccactaggtg 1450
gtgctggatg cttgttcttt ggccagccaa ggttcacggc gattctcccc 1500
atgggatctt gagggaccaa gctgctggga ttgggaagga gtttcaccct 1550
gaccgttgcc ctagccaggt tcccaggagg cctcaccata ctccctttca 1600
gggccagggc tccagcaagc ccagggaag gatcctgtgc tgctgtctgg 1650
ttgagagcct gccaccgtgt gtcgggagtg tgggccaggc tgagtgcata 1700
ggtgacaggg ccgtgagcat gggcctgggt gtgtgtgagc tcaggcctag 1750

gtgcgcagtg tggagacggg tgttgctcggg gaagaggtgt ggcttcaaag 1800
 tgtgtgtgtg cagggggtgg gtgtgttagc gtgggttagg ggaacgtgtg 1850
 tgcgcgtgct ggtgggcatg tgagatgagt gactgccggt gaatgtgtcc 1900
 acagttgaga ggttggagca ggatgaggga atcctgtcac catcaataat 1950
 cacttggtga gcgccagctc tgcccaagac gccacctggg cggacagcca 2000
 ggagctctcc atggccaggc tgctgtgtg catgttcctt gtctggtgcc 2050
 cctttgcccg cctcctgcaa acctcacagg gtccccacac aacagtgcc 2100
 tccagaagca gcccctcgga ggcagaggaa ggaaaatggg gatggctggg 2150
 gctctctcca tcctcctttt ctcttgcct tcgcatggct ggcttcccc 2200
 tccaaaacct ccattccctt gctgccagcc cctttgccat agcctgattt 2250
 tggggaggag gaaggggcga tttgaggag aaggggagaa agcttatggc 2300
 tgggtctggt ttcttccctt ccagagggt cttactgttc cagggtggcc 2350
 ccagggcagg caggggccac actatgcctg tgccctggta aaggtgacc 2400
 ctgccattta ccagcagccc tggcatgttc ctgccccaca ggaatagaat 2450
 ggagggagct ccagaaactt tccatcccaa aggcagtctc cgtggttgaa 2500
 gcagactgga tttttgctct gccctgacc cttgttcctt ctttgaggga 2550
 ggggagctat gctaggactc caacctcagg gactcgggtg gcctgcgcta 2600
 gcttcttttg atactgaaaa cttttaaggt gggagggtgg caagggatgt 2650
 gcttaataaa tcaattccaa gcctcaaaaa aaaaaaaaaa aa 2692

<210> 299

<211> 320

<212> PRT

<213> Homo sapiens

<400> 299

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Gly | Leu | Ala | Ala | Arg | Leu | Val | Leu | Leu | Ala | Gly | Ala | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Leu | Ala | Ser | Gly | Ser | Gln | Gly | Asp | Arg | Glu | Pro | Val | Tyr | Arg |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Cys | Val | Leu | Gln | Cys | Glu | Glu | Gln | Asn | Cys | Ser | Gly | Gly | Ala |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Asn | His | Phe | Arg | Ser | Arg | Gln | Pro | Ile | Tyr | Met | Ser | Leu | Ala |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Trp | Thr | Cys | Arg | Asp | Asp | Cys | Lys | Tyr | Glu | Cys | Met | Trp | Val |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

| 65 | | | | | 70 | | | | | 75 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Val | Gly | Leu | Tyr | Leu | Gln | Glu | Gly | His | Lys | Val | Pro | Gln | Phe |
| | | | | 80 | | | | | | | | | | 90 |
| His | Gly | Lys | Trp | Pro | Phe | Ser | Arg | Phe | Leu | Phe | Phe | Gln | Glu | Pro |
| | | | | 95 | | | | | | | | | | 105 |
| Ala | Ser | Ala | Val | Ala | Ser | Phe | Leu | Asn | Gly | Leu | Ala | Ser | Leu | Val |
| | | | | 110 | | | | | | | | | | 120 |
| Met | Leu | Cys | Arg | Tyr | Arg | Thr | Phe | Val | Pro | Ala | Ser | Ser | Pro | Met |
| | | | | 125 | | | | | | | | | | 135 |
| Tyr | His | Thr | Cys | Val | Ala | Phe | Ala | Trp | Val | Ser | Leu | Asn | Ala | Trp |
| | | | | 140 | | | | | | | | | | 150 |
| Phe | Trp | Ser | Thr | Val | Phe | His | Thr | Arg | Asp | Thr | Asp | Leu | Thr | Glu |
| | | | | 155 | | | | | | | | | | 165 |
| Lys | Met | Asp | Tyr | Phe | Cys | Ala | Ser | Thr | Val | Ile | Leu | His | Ser | Ile |
| | | | | 170 | | | | | | | | | | 180 |
| Tyr | Leu | Cys | Cys | Val | Arg | Thr | Val | Gly | Leu | Gln | His | Pro | Ala | Val |
| | | | | 185 | | | | | | | | | | 195 |
| Val | Ser | Ala | Phe | Arg | Ala | Leu | Leu | Leu | Leu | Met | Leu | Thr | Val | His |
| | | | | 200 | | | | | | | | | | 210 |
| Val | Ser | Tyr | Leu | Ser | Leu | Ile | Arg | Phe | Asp | Tyr | Gly | Tyr | Asn | Leu |
| | | | | 215 | | | | | | | | | | 225 |
| Val | Ala | Asn | Val | Ala | Ile | Gly | Leu | Val | Asn | Val | Val | Trp | Trp | Leu |
| | | | | 230 | | | | | | | | | | 240 |
| Ala | Trp | Cys | Leu | Trp | Asn | Gln | Arg | Arg | Leu | Pro | His | Val | Arg | Lys |
| | | | | 245 | | | | | | | | | | 255 |
| Cys | Val | Val | Val | Val | Leu | Leu | Leu | Gln | Gly | Leu | Ser | Leu | Leu | Glu |
| | | | | 260 | | | | | | | | | | 270 |
| Leu | Leu | Asp | Phe | Pro | Pro | Leu | Phe | Trp | Val | Leu | Asp | Ala | His | Ala |
| | | | | 275 | | | | | | | | | | 285 |
| Ile | Trp | His | Ile | Ser | Thr | Ile | Pro | Val | His | Val | Leu | Phe | Phe | Ser |
| | | | | 290 | | | | | | | | | | 300 |
| Phe | Leu | Glu | Asp | Asp | Ser | Leu | Tyr | Leu | Leu | Lys | Glu | Ser | Glu | Asp |
| | | | | 305 | | | | | | | | | | 315 |
| Lys | Phe | Lys | Leu | Asp | | | | | | | | | | |
| | | | | 320 | | | | | | | | | | |

<210> 300

<211> 1674

<212> DNA

<213> Homo sapiens

<400> 300

```
ggccgcctgg aattgtggga gttgtgtctg ccactcggct gccggaggcc 50
gaagggtccgt gactatggct ccccagagcc tgccttcac taggatggct 100
cctctgggca tgctgcttgg gctgctgatg gccgcctgct tcaccttctg 150
cctcagtcac cagaacctga aggagtttgc cctgaccaac ccagagaaga 200
gcagcaccaa agaaacggag agaaaagaaa ccaaagccga ggaggagctg 250
gatgccgaag tcctggagggt gttccacccg acgcatgagt ggcaggccct 300
tcagccaggg caggctgtcc ctgcaggatc ccacgtacgg ctgaatcttc 350
agactgggga aagagaggca aaactccaat atgaggacaa gttccgaaat 400
aatttgaaag gcaaaaggct ggatatcaac accaacacct acacatctca 450
ggatctcaag agtgcactgg caaaattcaa ggagggggca gagatggaga 500
gttcaaagga agacaaggca aggcaggctg aggtaaagcg gctcttcgcg 550
cccattgagg aactgaagaa agactttgat gagctgaatg ttgtcattga 600
gactgacatg cagatcatgg tacggctgat caacaagtgc aatagttcca 650
gctccagttt ggaagagaag attgctgcgc tctttgatct tgaatattat 700
gtccatcaga tggacaatgc gcaggacctg ctttcctttg gtggtcttca 750
agtgggtgatc aatgggctga acagcacaga gccctcgtg aaggagtatg 800
ctgcgtttgt gctgggctgct gccttttcca gcaaccccaa ggtccaggctg 850
gaggccatcg aagggggagc cctgcagaag ctgctggtca tcctggccac 900
ggagcagccg ctactgcaa agaagaaggt cctgtttgca ctgtgctccc 950
tgctgcgcca ctccccctat gccagcggc agttcctgaa gctcgggggg 1000
ctgcaggctc tgaggacct ggtgcaggag aagggcacgg aggtgctcgc 1050
cgtgcgcgtg gtcacactgc tctacgacct ggtcacggag aagatgttcg 1100
ccgaggagga ggctgagctg acccaggaga tgtccccaga gaagctgcag 1150
cagtatcgcc aggtacacct cctgccaggc ctgtgggaac agggctggtg 1200
cgagatcacg gccacctcc tggcgctgcc cgagcatgat gcccgtaga 1250
aggtgctgca gacactgggc gtctctctga ccacctgccg ggaccgctac 1300
cgtcaggacc ccagctcgg caggacactg gccagcctgc aggctgagta 1350
ccagggtgctg gccagcctgg agctgcagga tggtagaggac gagggtact 1400
```


tccaggagct gctgggctct gtcaacagct tgctgaagga gctgagatga 1450
ggccccacac caggactgga ctgggatgcc gctagtgagg ctgaggggtg 1500
ccagcgtggg tgggcttctc aggcaggagg acatcttggc agtgctggct 1550
tggccattaa atggaaacct gaaggccaaa aaaaaaaaaa aaaaaaaaaa 1600
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1650
aaaaaaaaaa aaaaaaaaaa aaaa 1674

<210> 301
<211> 461
<212> PRT
<213> Homo sapiens

<400> 301
Met Ala Pro Gln Ser Leu Pro Ser Ser Arg Met Ala Pro Leu Gly
1 5 10 15
Met Leu Leu Gly Leu Leu Met Ala Ala Cys Phe Thr Phe Cys Leu
20 25 30
Ser His Gln Asn Leu Lys Glu Phe Ala Leu Thr Asn Pro Glu Lys
35 40 45
Ser Ser Thr Lys Glu Thr Glu Arg Lys Glu Thr Lys Ala Glu Glu
50 55 60
Glu Leu Asp Ala Glu Val Leu Glu Val Phe His Pro Thr His Glu
65 70 75
Trp Gln Ala Leu Gln Pro Gly Gln Ala Val Pro Ala Gly Ser His
80 85 90
Val Arg Leu Asn Leu Gln Thr Gly Glu Arg Glu Ala Lys Leu Gln
95 100 105
Tyr Glu Asp Lys Phe Arg Asn Asn Leu Lys Gly Lys Arg Leu Asp
110 115 120
Ile Asn Thr Asn Thr Tyr Thr Ser Gln Asp Leu Lys Ser Ala Leu
125 130 135
Ala Lys Phe Lys Glu Gly Ala Glu Met Glu Ser Ser Lys Glu Asp
140 145 150
Lys Ala Arg Gln Ala Glu Val Lys Arg Leu Phe Arg Pro Ile Glu
155 160 165
Glu Leu Lys Lys Asp Phe Asp Glu Leu Asn Val Val Ile Glu Thr
170 175 180
Asp Met Gln Ile Met Val Arg Leu Ile Asn Lys Phe Asn Ser Ser
185 190 195

| | | | |
|-----------------|---------------------|---------------------|-----|
| Ser Ser Ser Leu | Glu Glu Lys Ile Ala | Ala Leu Phe Asp Leu | Glu |
| 200 | 205 | 210 | |
| Tyr Tyr Val His | Gln Met Asp Asn Ala | Gln Asp Leu Leu Ser | Phe |
| 215 | 220 | 225 | |
| Gly Gly Leu Gln | Val Val Ile Asn Gly | Leu Asn Ser Thr Glu | Pro |
| 230 | 235 | 240 | |
| Leu Val Lys Glu | Tyr Ala Ala Phe Val | Leu Gly Ala Ala Phe | Ser |
| 245 | 250 | 255 | |
| Ser Asn Pro Lys | Val Gln Val Glu Ala | Ile Glu Gly Gly Ala | Leu |
| 260 | 265 | 270 | |
| Gln Lys Leu Leu | Val Ile Leu Ala Thr | Glu Gln Pro Leu Thr | Ala |
| 275 | 280 | 285 | |
| Lys Lys Lys Val | Leu Phe Ala Leu Cys | Ser Leu Leu Arg His | Phe |
| 290 | 295 | 300 | |
| Pro Tyr Ala Gln | Arg Gln Phe Leu Lys | Leu Gly Gly Leu Gln | Val |
| 305 | 310 | 315 | |
| Leu Arg Thr Leu | Val Gln Glu Lys Gly | Thr Glu Val Leu Ala | Val |
| 320 | 325 | 330 | |
| Arg Val Val Thr | Leu Leu Tyr Asp Leu | Val Thr Glu Lys Met | Phe |
| 335 | 340 | 345 | |
| Ala Glu Glu Glu | Ala Glu Leu Thr Gln | Glu Met Ser Pro Glu | Lys |
| 350 | 355 | 360 | |
| Leu Gln Gln Tyr | Arg Gln Val His Leu | Leu Pro Gly Leu Trp | Glu |
| 365 | 370 | 375 | |
| Gln Gly Trp Cys | Glu Ile Thr Ala His | Leu Leu Ala Leu Pro | Glu |
| 380 | 385 | 390 | |
| His Asp Ala Arg | Glu Lys Val Leu Gln | Thr Leu Gly Val Leu | Leu |
| 395 | 400 | 405 | |
| Thr Thr Cys Arg | Asp Arg Tyr Arg Gln | Asp Pro Gln Leu Gly | Arg |
| 410 | 415 | 420 | |
| Thr Leu Ala Ser | Leu Gln Ala Glu Tyr | Gln Val Leu Ala Ser | Leu |
| 425 | 430 | 435 | |
| Glu Leu Gln Asp | Gly Glu Asp Glu Gly | Tyr Phe Gln Glu Leu | Leu |
| 440 | 445 | 450 | |
| Gly Ser Val Asn | Ser Leu Leu Lys Glu | Leu Arg | |
| 455 | 460 | | |

<210> 302
<211> 2136

<212> DNA

<213> Homo sapiens

<400> 302

ttcggcttcc gtagaggaag tggcgcggaac cttcatttgg ggtttcggtt 50
cccccccttc cccttccccg gggctctgggg gtgacattgc accgcgcccc 100
tcgtgggggtc gcgttgccac ccacgcgga ctccccagct ggcgcgcccc 150
tcccatttgc ctgtcctgggt caggccccca ccccccttcc cacctgacca 200
gccatggggg ctgcggtgtt tttcggtgc actttcgtcg cgttcggccc 250
ggccttcgcg cttttcttga tcaactgtggc tggggaccgc cttcgcgtta 300
tcatcctgggt cgcaggggca tttttctggc tgggtctcct gtcctggcc 350
tctgtggtct ggttcattct ggtccatgtg accgaccggc cagatgcccc 400
gtccagtagc ggcctcctga tttttgggtc tgctgtctct gtccttctac 450
aggaggtgtt ccgctttgcc tactacaagc tgcttaagaa ggcagatgaa 500
gggttagcat cgctgagtga ggacggaaga tcacccatct ccatccgcca 550
gatggcctat gtttctgggtc tctccttcgg tatcatcagt ggtgtcttct 600
ctgttatcaa tattttgggt gatgcacttg ggccaggtgt ggttgggac 650
catggagact caccctatta ctctctgact tcagccttct tgacagcagc 700
cattatcctg ctccatacct tttggggagt tgtgttcttt gatgcctgtg 750
agaggagacg gtactgggct ttgggcctgg tggttgggag tcacctactg 800
acatcgggac tgacattcct gaacccctgg tatgaggcca gcctgctgcc 850
catctatgca gtcactgttt ccatggggct ctgggccttc atcacagctg 900
gagggtcctt ccgaagtatt cagcgagcc tcttgtgtaa ggactgacta 950
cctggactga tcgcctgaca gatccacct gcctgtccac tgcccatgac 1000
tgagcccagc ccagcccgg gtccattgcc cacattctct gtctccttct 1050
cgtcgggtcta cccactacc tccagggttt tgctttgtcc ttttgtgacc 1100
gttagtctct aagctttacc aggagcagcc tgggttcagc cagtcagtga 1150
ctggtgggtt tgaatctgca cttatcccca ccacctgggg acccccttgt 1200
tgtgtccagg actccccctg tgctagtgct ctgctctcac cctgcccag 1250
actcacctcc cttccccctc gcaggccgac ggcaggagga cagtcgggtg 1300
atggtgtatt ctgccctgcg catcccaccc gaggactgag ggaacctagg 1350

```

ggggacccct gggcctgggg tgccctcctg atgtcctcgc cctgtatttc 1400
tccatctcca gttctggaca gtgcaggttg ccaagaaaag ggacctagtt 1450
tagccattgc cctggagatg aaattaatgg aggctcaagg atagatgagc 1500
tctgagtttc tcagtactcc ctcaagactg gacatcttgg tctttttctc 1550
aggcctgagg gggaaccatt tttggtgtga taaataccct aaactgcctt 1600
tttttctttt ttgaggtggg gggagggagg aggtatatgt gaactcttct 1650
aacctccttg ggctatatatt tctctcctcg agttgctcct catggctggg 1700
ctcatttcgg tccctttctc cttggtccca gaccttgggg gaaaggaagg 1750
aagtgcattg ttgggaactg gcattactgg aactaatggt tttaacctcc 1800
ttaaccacca gcacccctcc tctccccaag gtgaagtgga gggtgctgtg 1850
gtgagctggc cactccagag ctgcagtgcc actggaggag tcagactacc 1900
atgacatcgt agggaaggag gggagatttt tttgtagttt ttaattgggg 1950
tgtgggaggg gcggggaggt tttctataaa ctgtatcatt ttctgctgag 2000
ggtggagtgt cccatccttt taatcaaggt gattgtgatt ttgactaata 2050
aaaaagaatt tgtaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2100
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa 2136

```

```

<210> 303
<211> 247
<212> PRT
<213> Homo sapiens

```

```

<400> 303
Met Gly Ala Ala Val Phe Phe Gly Cys Thr Phe Val Ala Phe Gly
  1                   5                   10                   15

Pro Ala Phe Ala Leu Phe Leu Ile Thr Val Ala Gly Asp Pro Leu
                   20                   25                   30

Arg Val Ile Ile Leu Val Ala Gly Ala Phe Phe Trp Leu Val Ser
                   35                   40                   45

Leu Leu Leu Ala Ser Val Val Trp Phe Ile Leu Val His Val Thr
                   50                   55                   60

Asp Arg Ser Asp Ala Arg Leu Gln Tyr Gly Leu Leu Ile Phe Gly
                   65                   70                   75

Ala Ala Val Ser Val Leu Leu Gln Glu Val Phe Arg Phe Ala Tyr
                   80                   85                   90

```

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Tyr | Lys | Leu | Leu | Lys | Lys | Ala | Asp | Glu | Gly | Leu | Ala | Ser | Leu | Ser | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Glu | Asp | Gly | Arg | Ser | Pro | Ile | Ser | Ile | Arg | Gln | Met | Ala | Tyr | Val | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Ser | Gly | Leu | Ser | Phe | Gly | Ile | Ile | Ser | Gly | Val | Phe | Ser | Val | Ile | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Asn | Ile | Leu | Ala | Asp | Ala | Leu | Gly | Pro | Gly | Val | Val | Gly | Ile | His | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Gly | Asp | Ser | Pro | Tyr | Tyr | Phe | Leu | Thr | Ser | Ala | Phe | Leu | Thr | Ala | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Ala | Ile | Ile | Leu | Leu | His | Thr | Phe | Trp | Gly | Val | Val | Phe | Phe | Asp | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Ala | Cys | Glu | Arg | Arg | Arg | Tyr | Trp | Ala | Leu | Gly | Leu | Val | Val | Gly | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ser | His | Leu | Leu | Thr | Ser | Gly | Leu | Thr | Phe | Leu | Asn | Pro | Trp | Tyr | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Glu | Ala | Ser | Leu | Leu | Pro | Ile | Tyr | Ala | Val | Thr | Val | Ser | Met | Gly | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Leu | Trp | Ala | Phe | Ile | Thr | Ala | Gly | Gly | Ser | Leu | Arg | Ser | Ile | Gln | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Arg | Ser | Leu | Leu | Cys | Lys | Asp | | | | | | | | | |
| | | | | 245 | | | | | | | | | | | |

<210> 304
 <211> 240
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 108, 123, 126, 154, 198, 206, 217
 <223> unknown base

<400> 304
 aagctgggtt aaggaagcag aggagggtta gattcggtga gtgaggacgg 50
 aagatcaacc catttccatt ccgccagatg gcctatgttt ctggtctctc 100
 ccttcggnat catcagtggg gtnttntctg ttatcaatat tttggctgat 150
 gcanttgggc caggtgtggg tgggatccat ggagactcac cctattantt 200
 cctganttca gccttntga cagcagccat taccctgctc 240

<210> 305
 <211> 378
 <212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 58, 94, 132, 186, 191, 220, 240, 248, 280, 311, 332

<223> unknown base

<400> 305

gaccgaccgt tcagatgccc gggtccagta cggcttcctg atttttggtg 50

ctgctgtntc tgtccttcta caggaggtgt tccgctttgc ctantacaag 100

ctgcttaaga aggcagatga ggggttagca tngctgagtg aggacggaag 150

atcacccatt tccatccgcc agatggccta tgtttntggt ntttccttcg 200

gtatcatcag tgggtgttttn tctgttatca atattttggn tgatgcantt 250

gggccagggtg tgggtgggat ccatggagan tcacctatt aattcctgaa 300

ttcagccttt ntgcacagcag ccattatcct gntccatacc ttttggggag 350

ttgtgttttt tgatgcctgt gagaggag 378

<210> 306

<211> 655

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 1, 22, 129, 133, 184

<223> unknown base

<400> 306

ngttggagaa gtggcgcgga cnttcatttg gggtttcggt tccccccctt 50

tccctttccc cgggggtctgg ggtgacattg cacgggcccc tcgtggggtc 100

gcgttgccac ccacgcgga ctccccagnt ggngcgccct tcccatttgc 150

ctgtcctggt caggccccca ccccccttcc cacntgacca gccatggggg 200

ctgcggtgtt tttcggtgc actttcgctg cgttcggccc ggccttcgcg 250

cttttcttga tcaactgtggc tggggacccg cttcgcgtta tcatcctggt 300

cgcaggggca tttttctggc tgggtctccct gtccttgccc tctgtggtct 350

ggttcattct ggtccatgtg accgaccggt cagatgcccc gctccagtac 400

ggcctcctga tttttggtgc tgctgtctct gtccttctac aggaggtgtt 450

ccgctttgcc tactacaagc tgcttaagaa ggcagatgag gggttagcat 500

cgctgagtga ggacggaaga tcacccatct ccatccgcca gatggcctat 550

gtttctggtc tctccttcgg tatcatcagt ggtgtcttct ctgttatcaa 600
tattttggct gatgcacttg ggccagggtg gggtgggatc catggagact 650
caccc 655

<210> 307
<211> 650
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 52, 89, 128
<223> unknown base

<400> 307
gtaaaagaaa gtggccggac cttcattggg gtttcggttc cccctttcc 50
cnttccccgg ggtctggggg tgacattgca ccgcgccnt cgtggggtcg 100
cgttgccacc ccacgcggac tccccagntg gcgcgccct cccatttgcc 150
tgtcctggtc aggccccac cccctttccc acctgaccag ccatgggggc 200
tgcggtgttt ttcgggctgc actttcgctg cggtcgggcc cggccttcgc 250
gcttttcttg atcactgtgg ctggggaccc gcttcgcgtt atcatcctgg 300
tcgcaggggc atttttctgg ctggtctccc tgetcctggc ctctgtggtc 350
tggttcatct tgggtccatg gaccgaccgg tcagatgcc ggctccagta 400
cggcctcctg atttttggtg ctgctgtctc tgctcttcta caggagggtg 450
tccgctttgc ctactacaag ctgcttaaga aggcagatga ggggttagca 500
tcgctgagtg aggacggaag atcacccatc tccatccgcc agatggccta 550
tgtttctggt ctctccttcg gtatcatcag tgggtgtctc tctgttatca 600
atattttggc tgatgcactt ggccagggtg tggttgggat ccatggagac 650

<210> 308
<211> 1570
<212> DNA
<213> Homo sapiens

<400> 308
gccccaggga gcagtgggtg gttataactc aggcccggtg cccagagccc 50
aggaggaggc agtggccagg aaggcacagg cctgagaagt ctgcggctga 100
gctgggagca aatccccac cccctacctg ggggacagg caagtgagac 150
ctggtgaggg tggtcagca ggcagggaag gagagggtgc tgtgcgtcct 200

gcacccacat ctttctctgt cccctccttg ccctgtcttg aggtctctag 250
actcctatct tctgaattct atagtgcctg ggtctcagcg cagtgccgat 300
ggtggcccggt ccttgtggtt cctctctacc tggggaaata aggtgcagcg 350
gccatggcta cagcaagacc cccctggatg tgggtgctct gtgctctgat 400
cacagccttg cttctggggg tcacagagca tgttctcgcc aacaatgatg 450
tttctgtga ccacccctct aacaccgtgc cctctgggag caaccaggac 500
ctgggagctg gggccgggga agacgcccgg tcggatgaca gcagcagccg 550
catcatcaat ggatccgact gcgatatgca caccagccg tggcaggccg 600
cgctgttgct aaggcccaac cagctctact gcggggcggt gttggtgcat 650
ccacagtggc tgctcacggc cgccactgc aggaagaaag ttttcagagt 700
cgtctcggc cactactccc tgtcaccagt ttatgaatct gggcagcaga 750
tgttccaggg ggtcaaatcc atccccacc ctggctactc ccaccctggc 800
cactctaacg acctcatgct catcaaactg aacagaagaa ttctgtccac 850
taaagatgtc agacccatca acgtctctc tcattgtccc tctgctggga 900
caaagtgtt ggtgtctggc tgggggacaa ccaagagccc ccaagtgcac 950
ttccctaagg tcctccagt cttgaatct agcgtgctaa gtcagaaaag 1000
gtgagaggat gcttaccgga gacagataga tgacaccatg ttctgcgccg 1050
gtgacaaagc aggtagagac tcctgccagg gtgattcttg ggggcctgtg 1100
gtctgcaatg gctccctgca gggactcgtg tcctggggag attacccttg 1150
tgcccgccc aacagaccgg gtgtctacac gaacctctgc aagttacca 1200
agtggatcca ggaaaccatc caggccaact cctgagtcac ccaggactc 1250
agcacaccgg catccccacc tgctgcaggg acagccctga cactcctttc 1300
agaccctcat tccttcccag agatgttgag aatgttcac tctccagccc 1350
ctgaccccat gtctcctgga ctcagggtct gcttccccca cattgggctg 1400
accgtgtctc tctagttgaa cctggggaac aatttccaaa actgtccagg 1450
gcggggggtt cgtctcaatc tcctggggc actttcatcc tcaagctcag 1500
ggcccatccc ttctctgcag ctctgacca aatttagtcc cagaaataaa 1550
ctgagaagtg gaaaaaaaaa 1570

<211> 293
<212> PRT
<213> Homo sapiens

<400> 309

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Ala | Thr | Ala | Arg | Pro | Pro | Trp | Met | Trp | Val | Leu | Cys | Ala | Leu | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Ile | Thr | Ala | Leu | Leu | Leu | Gly | Val | Thr | Glu | His | Val | Leu | Ala | Asn | |
| | | | 20 | | | | | | 25 | | | | | 30 | |
| Asn | Asp | Val | Ser | Cys | Asp | His | Pro | Ser | Asn | Thr | Val | Pro | Ser | Gly | |
| | | | 35 | | | | | | 40 | | | | | 45 | |
| Ser | Asn | Gln | Asp | Leu | Gly | Ala | Gly | Ala | Gly | Glu | Asp | Ala | Arg | Ser | |
| | | | 50 | | | | | | 55 | | | | | 60 | |
| Asp | Asp | Ser | Ser | Ser | Arg | Ile | Ile | Asn | Gly | Ser | Asp | Cys | Asp | Met | |
| | | | 65 | | | | | | 70 | | | | | 75 | |
| His | Thr | Gln | Pro | Trp | Gln | Ala | Ala | Leu | Leu | Leu | Arg | Pro | Asn | Gln | |
| | | | 80 | | | | | | 85 | | | | | 90 | |
| Leu | Tyr | Cys | Gly | Ala | Val | Leu | Val | His | Pro | Gln | Trp | Leu | Leu | Thr | |
| | | | 95 | | | | | | 100 | | | | | 105 | |
| Ala | Ala | His | Cys | Arg | Lys | Lys | Val | Phe | Arg | Val | Arg | Leu | Gly | His | |
| | | | 110 | | | | | | 115 | | | | | 120 | |
| Tyr | Ser | Leu | Ser | Pro | Val | Tyr | Glu | Ser | Gly | Gln | Gln | Met | Phe | Gln | |
| | | | 125 | | | | | | 130 | | | | | 135 | |
| Gly | Val | Lys | Ser | Ile | Pro | His | Pro | Gly | Tyr | Ser | His | Pro | Gly | His | |
| | | | 140 | | | | | | 145 | | | | | 150 | |
| Ser | Asn | Asp | Leu | Met | Leu | Ile | Lys | Leu | Asn | Arg | Arg | Ile | Arg | Pro | |
| | | | 155 | | | | | | 160 | | | | | 165 | |
| Thr | Lys | Asp | Val | Arg | Pro | Ile | Asn | Val | Ser | Ser | His | Cys | Pro | Ser | |
| | | | 170 | | | | | | 175 | | | | | 180 | |
| Ala | Gly | Thr | Lys | Cys | Leu | Val | Ser | Gly | Trp | Gly | Thr | Thr | Lys | Ser | |
| | | | 185 | | | | | | 190 | | | | | 195 | |
| Pro | Gln | Val | His | Phe | Pro | Lys | Val | Leu | Gln | Cys | Leu | Asn | Ile | Ser | |
| | | | 200 | | | | | | 205 | | | | | 210 | |
| Val | Leu | Ser | Gln | Lys | Arg | Cys | Glu | Asp | Ala | Tyr | Pro | Arg | Gln | Ile | |
| | | | 215 | | | | | | 220 | | | | | 225 | |
| Asp | Asp | Thr | Met | Phe | Cys | Ala | Gly | Asp | Lys | Ala | Gly | Arg | Asp | Ser | |
| | | | 230 | | | | | | 235 | | | | | 240 | |
| Cys | Gln | Gly | Asp | Ser | Gly | Gly | Pro | Val | Val | Cys | Asn | Gly | Ser | Leu | |
| | | | 245 | | | | | | 250 | | | | | 255 | |
| Gln | Gly | Leu | Val | Ser | Trp | Gly | Asp | Tyr | Pro | Cys | Ala | Arg | Pro | Asn | |

| | | | |
|-----|-----|-----|-----|
| | 260 | 265 | 270 |
| Arg | Pro | Gly | Val |
| | Tyr | Thr | Asn |
| | 275 | | |
| | | Cys | Lys |
| | | 280 | |
| | | Phe | Thr |
| | | Lys | Trp |
| | | | Ile |
| | | | 285 |
| Gln | Glu | Thr | Ile |
| | Gln | Ala | Asn |
| | 290 | Ser | |

<210> 310
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 310
 tcctgtgacc acccctctaa cacc 24

<210> 311
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 311
 ctggaacatc tgctgccag attc 24

<210> 312
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 312
 gtcggatgac agcagcagcc gcatcatcaa tggatccgac tgcgatatgc 50

<210> 313
 <211> 3010
 <212> DNA
 <213> Homo sapiens

<400> 313
 atggtcaacg accggtggaa gaccatgggc ggcgctgcc aacttgagga 50
 ccggccgcgc gacaagccgc agcggccgag ctgcggctac gtgctgtgca 100
 ccgtgctgct ggccctggct gtgctgctgg ctgtagctgt caccggtgcc 150
 gtgtctttcc tgaaccacgc ccacgcgccg ggcacggcgc cccacctgt 200
 cgtcagcact ggggctgcca gcgccaacag cgccctggtc actgtggaaa 250

gggaggacag ctgcacctc agcatcctca ttgaccgcg ctgccccgac 300
ctcaccgaca gcttcgcacg cctggagagc gccaggcct cgggtgctgca 350
ggcgctgaca gagcaccagg ccagaccacg gctggtgggc gaccaggagc 400
aggagctgct ggacacgctg gccgaccagc tgccccggct gctggccga 450
gcctcagagc tgacagcga gtgcatgggg ctgcggaagg ggcatggcac 500
gctggggccag ggctcagcg ccctgcagag tgagcagggc cgctcatcc 550
agcttctctc tgagagccag ggccacatgg ctacactggt gaactccgct 600
agcgacatcc tggatgccct gcagaggagc cgggggctgg gccggccccg 650
caacaaggcc gaccttcaga gagcgctgc ccggggaacc cggccccggg 700
gctgtgccac tggctcccg ccccgagact gtctggacgt cctcctaagc 750
ggacagcagg acgatggcgt ctactctgtc tttccaccc actaccggc 800
cggttccag gtgtactgtg acatgcgcac ggacggcggc ggctggacgg 850
tgtttcagcg ccgggaggac ggctccgtga acttcttccg gggctgggac 900
gcgtaccgag acggctttgg caggctcacc ggggagcact ggctagggct 950
caagaggatc cagccctga ccacacaggc tgcctacgag ctgcacgtgg 1000
acctggagga ctttgagaat ggacggcct atgcccgcta cgggagcttc 1050
ggcggtgggt tgttctccgt ggacctgag gaagacgggt acccgctcac 1100
cgtggctgac tattccggca ctgcaggcga ctccctcctg aagcacagcg 1150
gcatgaggtt caccaccaag gaccgtgaca gcgaccattc agagaacaac 1200
tgtgccgct tctaccggg tgctggtgg taccgcaact gccacacgtc 1250
caacctcaat gggcagtacc tgcgcggtgc gcacgcctcc tatgccgacg 1300
gcgtggagtg gtctcctgg accggctggc agtactcact caagttctct 1350
gagatgaaga tccggccggc ccgggaggac cgctagactg gtgcaccttg 1400
tccttgcccc tgctggtccc tgtcgccccca tccccgaccc cacctcactc 1450
tttcgtgaat gttctccacc cacctgtgcc tggcggaccc actctccagt 1500
agggaggggc cgggccatcc ctgacacgaa gctccctggg ccggtgaagt 1550
cacacatcgc cttctgcgcg tccccacccc ctccatttgg cagctcactg 1600
atctcttgcc tctgctgatg ggggctggca aacttgacga ccccaactcc 1650
tgctgcccc cactgtgact ccggtgctgt ttgccgtccc ctggccagga 1700

tgggtggagtc tgccccaggc accctctgcc ctgcccggcc aaatacccgg 1750
 cattatgggg acagagagca gggggcagac agcaccctg gagtcctcct 1800
 agcagatcgt ggggaatgtc aggtctctct gaggtcaggt ctgaggccag 1850
 tatcctccag ccctcccaat gccaaacccc accccgtttc cctggtgccc 1900
 agagaaccca cctctcccc aagggcctca gcctggctgt gggctgggtg 1950
 gccccatcct accaggcctt gaggtcagga tggggagctg ctgccttttg 2000
 ggaccacgc tccaaggctg agaccagttc cctggaggcc acccacctg 2050
 tgccccggca ggctgggggt ctgcagtcct cttacctgct gtgcccacct 2100
 gctctctgtc tcaaagagg cccaacccat cccccacca gctcccggcc 2150
 gtctctctac ctggggcagc cggggctgcc atcccatttc tcctgcctct 2200
 ggaaggtggg tggggccctg caccgtgggg ctggactgct ctaatgggaa 2250
 gctcttggtt ttctgggctg gggcctaggc agggctggga tgaggcttgt 2300
 acaaccccca ccaccaattt ccaggggact ccagggtcct gaggcctccc 2350
 aggagggcct tgggggtgat gacccttcc ctgagggtgc tgtctccatg 2400
 aggaggccaa cccttgccat tgaccgtggc cacctggacc caggccaggc 2450
 ccggcccggc gagtgggtcaa gggacaggga ccacctcacc gggcaaatgg 2500
 ggtcgggggg actggggcac cagaccaggc accacctgga cactttcttg 2550
 ttgaatcctc ccaacacca gcacgtgtc atccccactc cttgtgtgca 2600
 cacatgcaga ggtgagacct gcaggctccc aggaccagca gccacaaggg 2650
 cagggtgga gccgggtcct cagctgtctg ctcagcagcc ctggaccgc 2700
 gtgcgttacg tcaggcccag atgcaggcg gcttttccaa ggcctcctga 2750
 tgggggcctc cgaaagggt ggagtcagcc ttggggagct gcctagcagc 2800
 ctctcctcgg gcaggagggg aggtggcttc ctccaaagga caccgatgg 2850
 cagggtgccta gggggtgtgg ggtccgttc tccctcccc tccactgaa 2900
 gtttgtgctt aaaaaacaat aaatttgact tggcaccact gggggttgg 2950
 gggagaggcc gtgtgacctg gctctctgtc ccagtgcac caggatcc 3000
 acatgcgcag 3010

<210> 314

<211> 461

<212> PRT

<213> Homo sapiens

<400> 314

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Val | Asn | Asp | Arg | Trp | Lys | Thr | Met | Gly | Gly | Ala | Ala | Gln | Leu | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Glu | Asp | Arg | Pro | Arg | Asp | Lys | Pro | Gln | Arg | Pro | Ser | Cys | Gly | Tyr | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Val | Leu | Cys | Thr | Val | Leu | Leu | Ala | Leu | Ala | Val | Leu | Leu | Ala | Val | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Ala | Val | Thr | Gly | Ala | Val | Leu | Phe | Leu | Asn | His | Ala | His | Ala | Pro | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Gly | Thr | Ala | Pro | Pro | Pro | Val | Val | Ser | Thr | Gly | Ala | Ala | Ser | Ala | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Asn | Ser | Ala | Leu | Val | Thr | Val | Glu | Arg | Ala | Asp | Ser | Ser | His | Leu | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Ser | Ile | Leu | Ile | Asp | Pro | Arg | Cys | Pro | Asp | Leu | Thr | Asp | Ser | Phe | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Ala | Arg | Leu | Glu | Ser | Ala | Gln | Ala | Ser | Val | Leu | Gln | Ala | Leu | Thr | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Glu | His | Gln | Ala | Gln | Pro | Arg | Leu | Val | Gly | Asp | Gln | Glu | Gln | Glu | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Leu | Leu | Asp | Thr | Leu | Ala | Asp | Gln | Leu | Pro | Arg | Leu | Leu | Ala | Arg | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Ala | Ser | Glu | Leu | Gln | Thr | Glu | Cys | Met | Gly | Leu | Arg | Lys | Gly | His | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Gly | Thr | Leu | Gly | Gln | Gly | Leu | Ser | Ala | Leu | Gln | Ser | Glu | Gln | Gly | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Arg | Leu | Ile | Gln | Leu | Leu | Ser | Glu | Ser | Gln | Gly | His | Met | Ala | His | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Leu | Val | Asn | Ser | Val | Ser | Asp | Ile | Leu | Asp | Ala | Leu | Gln | Arg | Asp | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Arg | Gly | Leu | Gly | Arg | Pro | Arg | Asn | Lys | Ala | Asp | Leu | Gln | Arg | Ala | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Pro | Ala | Arg | Gly | Thr | Arg | Pro | Arg | Gly | Cys | Ala | Thr | Gly | Ser | Arg | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Pro | Arg | Asp | Cys | Leu | Asp | Val | Leu | Leu | Ser | Gly | Gln | Gln | Asp | Asp | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Gly | Val | Tyr | Ser | Val | Phe | Pro | Thr | His | Tyr | Pro | Ala | Gly | Phe | Gln | |
| | | | | 260 | | | | | 265 | | | | | 270 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Tyr | Cys | Asp | Met | Arg | Thr | Asp | Gly | Gly | Gly | Trp | Thr | Val | Phe | 275 | 280 | 285 |
| Gln | Arg | Arg | Glu | Asp | Gly | Ser | Val | Asn | Phe | Phe | Arg | Gly | Trp | Asp | 290 | 295 | 300 |
| Ala | Tyr | Arg | Asp | Gly | Phe | Gly | Arg | Leu | Thr | Gly | Glu | His | Trp | Leu | 305 | 310 | 315 |
| Gly | Leu | Lys | Arg | Ile | His | Ala | Leu | Thr | Thr | Gln | Ala | Ala | Tyr | Glu | 320 | 325 | 330 |
| Leu | His | Val | Asp | Leu | Glu | Asp | Phe | Glu | Asn | Gly | Thr | Ala | Tyr | Ala | 335 | 340 | 345 |
| Arg | Tyr | Gly | Ser | Phe | Gly | Val | Gly | Leu | Phe | Ser | Val | Asp | Pro | Glu | 350 | 355 | 360 |
| Glu | Asp | Gly | Tyr | Pro | Leu | Thr | Val | Ala | Asp | Tyr | Ser | Gly | Thr | Ala | 365 | 370 | 375 |
| Gly | Asp | Ser | Leu | Leu | Lys | His | Ser | Gly | Met | Arg | Phe | Thr | Thr | Lys | 380 | 385 | 390 |
| Asp | Arg | Asp | Ser | Asp | His | Ser | Glu | Asn | Asn | Cys | Ala | Ala | Phe | Tyr | 395 | 400 | 405 |
| Arg | Gly | Ala | Trp | Trp | Tyr | Arg | Asn | Cys | His | Thr | Ser | Asn | Leu | Asn | 410 | 415 | 420 |
| Gly | Gln | Tyr | Leu | Arg | Gly | Ala | His | Ala | Ser | Tyr | Ala | Asp | Gly | Val | 425 | 430 | 435 |
| Glu | Trp | Ser | Ser | Trp | Thr | Gly | Trp | Gln | Tyr | Ser | Leu | Lys | Phe | Ser | 440 | 445 | 450 |
| Glu | Met | Lys | Ile | Arg | Pro | Val | Arg | Glu | Asp | Arg | | | | | 455 | 460 | |

<210> 315

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 315

cacacgtcca acctcaatgg gcag 24

<210> 316

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 316

gaccagcagg gccaaaggaca agg 23

<210> 317

<211> 44

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 317

gttctctgag atgaagatcc ggccgggtccg ggagtaccgc ttag 44

<210> 318

<211> 1841

<212> DNA

<213> Homo sapiens

<400> 318

gcagtcagag acttccccctg cccctcgctg ggaaagaaca ttaggaatgc 50

cttttagtgc cttgcttcct gaactagctc acagtagccc ggcggcccag 100

ggcaatccga ccacatttca ctctcaccgc tgtaggaatc cagatgcagg 150

ccaagtacag cagcacgagg gacatgctgg atgatgatgg ggacaccacc 200

atgagcctgc attctcaagc ctctgccaca actcggcatc cagagccccg 250

gcgcacagag cacagggctc cctcttcaac gtggcgacca gtggccctga 300

ccctgctgac tttgtgcttg gtgctgctga tagggctggc agccctgggg 350

cttttgtttt ttcagtacta ccagctctcc aatactggtc aagacaccat 400

ttctcaaagc gaagaaagat taggaaatac gtccaagag ttgcaatctc 450

ttcaagtcca gaatataaag cttgcaggaa gtctgcagca tgtggctgaa 500

aaactctgtc gtgagctgta taacaaagct ggagcacaca ggtgcagccc 550

ttgtacagaa caatggaaat ggcatggaga caattgctac cagttctata 600

aagacagcaa aagttgggag gactgtaaat atttctgcct tagtgaaaac 650

tctaccatgc tgaagataaa caaacaagaa gacctggaat ttgccgcgtc 700

tcagagctac tctgagtttt tctactctta ttggacaggg cttttgcgcc 750

ctgacagtgg caaggcctgg ctgtggatgg atggaacccc tttcacttct 800

gaactgttcc atattataat agatgtcacc agccaagaa gcagagactg 850

tgtggccatc ctcaatggga tgatcttctc aaaggactgc aaagaattga 900

agcgttggtgt ctgtgagaga agggcaggaa tgggtgaagcc agagagcctc 950
 catgtccccc ctgaaacatt aggcgaaggt gactgattcg ccctctgcaa 1000
 ctacaaatag cagagtgagc caggcgggtgc caaagcaagg gctagttgag 1050
 acattgggaa atggaacata atcaggaaag actatctctc tgactagtac 1100
 aaaatggggt ctcgtgtttc ctgttcagga tcaccagcat ttctgagctt 1150
 gggtttatgc acgtatttaa cagtcacaag aagtcttatt tacatgccac 1200
 caaccaacct cagaaacca taatgtcatc tgccttcttg gcttagagat 1250
 aacttttagc tctctttctt ctcaatgtct aatatcacct ccctgttttc 1300
 atgtcttcct tacacttggt ggaataagaa actttttgaa gtagaggaaa 1350
 tacattgagg taacatcctt ttctctgaca gtcaagtagt ccatcagaaa 1400
 ttggcagtca cttcccagat tgtaccagca aatacacaag gaattctttt 1450
 tgtttgtttc agttcatact agtcccttcc caatccatca gtaaagacct 1500
 catctgcctt gtccatgccg ttcccaaca gggatgtcac ttgatatgag 1550
 aatctcaaat ctcaatgcct tataagcatt ccttcctgtg tccattaaga 1600
 ctctgataat tgtctccct ccataggaat ttctcccagg aaagaaatat 1650
 atccccatct cggtttcata tcagaactac cgtccccgat attcccttca 1700
 gagagattaa agaccagaaa aaagtgagcc tcttcatctg cacctgtaat 1750
 agtttcagtt cctattttct tccattgacc catatttata cctttcaggt 1800
 actgaagatt taataataat aaatgtaaat actgtgaaaa a 1841

<210> 319

<211> 280

<212> PRT

<213> Homo sapiens

<400> 319

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gln | Ala | Lys | Tyr | Ser | Ser | Thr | Arg | Asp | Met | Leu | Asp | Asp | Asp |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Gly | Asp | Thr | Thr | Met | Ser | Leu | His | Ser | Gln | Ala | Ser | Ala | Thr | Thr |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Arg | His | Pro | Glu | Pro | Arg | Arg | Thr | Glu | His | Arg | Ala | Pro | Ser | Ser |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Thr | Trp | Arg | Pro | Val | Ala | Leu | Thr | Leu | Leu | Thr | Leu | Cys | Leu | Val |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Leu | Ile | Gly | Leu | Ala | Ala | Leu | Gly | Leu | Leu | Phe | Phe | Gln | Tyr | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Tyr | Gln | Leu | Ser | Asn | Thr | Gly | Gln | Asp | Thr | Ile | Ser | Gln | Met | Glu | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Glu | Arg | Leu | Gly | Asn | Thr | Ser | Gln | Glu | Leu | Gln | Ser | Leu | Gln | Val | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Gln | Asn | Ile | Lys | Leu | Ala | Gly | Ser | Leu | Gln | His | Val | Ala | Glu | Lys | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Leu | Cys | Arg | Glu | Leu | Tyr | Asn | Lys | Ala | Gly | Ala | His | Arg | Cys | Ser | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Pro | Cys | Thr | Glu | Gln | Trp | Lys | Trp | His | Gly | Asp | Asn | Cys | Tyr | Gln | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Phe | Tyr | Lys | Asp | Ser | Lys | Ser | Trp | Glu | Asp | Cys | Lys | Tyr | Phe | Cys | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Leu | Ser | Glu | Asn | Ser | Thr | Met | Leu | Lys | Ile | Asn | Lys | Gln | Glu | Asp | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Leu | Glu | Phe | Ala | Ala | Ser | Gln | Ser | Tyr | Ser | Glu | Phe | Phe | Tyr | Ser | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Tyr | Trp | Thr | Gly | Leu | Leu | Arg | Pro | Asp | Ser | Gly | Lys | Ala | Trp | Leu | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Trp | Met | Asp | Gly | Thr | Pro | Phe | Thr | Ser | Glu | Leu | Phe | His | Ile | Ile | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ile | Asp | Val | Thr | Ser | Pro | Arg | Ser | Arg | Asp | Cys | Val | Ala | Ile | Leu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Asn | Gly | Met | Ile | Phe | Ser | Lys | Asp | Cys | Lys | Glu | Leu | Lys | Arg | Cys | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Val | Cys | Glu | Arg | Arg | Ala | Gly | Met | Val | Lys | Pro | Glu | Ser | Leu | His | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Val | Pro | Pro | Glu | Thr | Leu | Gly | Glu | Gly | Asp | | | | | | |
| | | | | 275 | | | | | 280 | | | | | | |

<210> 320

<211> 468

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 59, 95, 149, 331, 364, 438, 446

<223> unknown base

<400> 320

aattttcacc gctgtaggaa tccagatgca ggccaagtac agcagcacga 50

gggacatgnt ggatgatgat gggacaccac catgagcctg cattntcaag 100
cttttggcac aattcggcat ccagagcccc ggcgcacaga gcacagggnt 150
cctttttcaa cgtggcgacc agtggccctg accctgctga ctttgtgctt 200
ggtgctgctg atagggctgg cagccctggg gcttttgttt tttcagtact 250
accagctctc caatactggg caagacacca tttctcaaat ggaagaaaga 300
ttaggaaata cgtcccaaga gttgcaattt nttcaagtcc agaataataa 350
gcttgcagga agtntgcagc atgtggctga aaaactctgt cgtgagctgt 400
ataacaaagc tggaggaact ttgaaggagg gcaaagtntc ctcatntact 450
atacacacac cacttccc 468

<210> 321

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 321

atgcaggcca agtacagcag cac 23

<210> 322

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 322

catgctgacg acttcctgca agc 23

<210> 323

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 323

ccacacagtc tctgcttctt ggg 23

<210> 324

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 324

atgctggatg atgatgggga caccaccatg agcctgcatt 40

<210> 325

<211> 2988

<212> DNA

<213> Homo sapiens

<400> 325

gccgagcgca agaaccctgc gcagcccaga gcagctgctg gaggggaatc 50

gaggcgcggc tccggggatt cggtcgggc cgctggctct gctctgcggg 100

gagggagcgg gcccgccgc ggggcccag ccctccgat ccgccccctc 150

cccgtccccg cccctcggga gactcctctg gctgctctgg gggttcgccg 200

gggcccggga ccgcggtcc gggcgccatg cgggcatcgc tgctgctgtc 250

ggtgctgcgg ccgcagggc ccgtggccgt gggcatctcc ctgggcttca 300

ccctgagcct gctcagcgtc acctgggtgg aggagccgtg cggcccaggc 350

ccgcccacac ctggagactc tgagctgccg ccgcgcggca acaccaacgc 400

ggcgcgccgg cccaactcgg tgcagcccgg agcggagcgc gagaagcccg 450

gggcccggca aggcgccggg gagaattggg agccgcgcgt cttgccctac 500

caccctgcac agcccggcca ggccgcaaaa aaggccgtca ggaccgcta 550

catcagcacg gagctgggca tcaggcagag gctgctggtg gcggtgctga 600

cctctcagac cacgtgccc acgtggggc tggccgtgaa ccgcacgctg 650

gggcaccggc tggagcgtgt ggtgttctc acgggcgcac ggggcccggc 700

ggccccacct ggcatggcag tggtagcgt gggcgaggag cgaccattg 750

gacacctgca cctggcgctg cgccacctgc tggagcagca cggcgacgac 800

tttgactggt tcttctggt gcctgacacc acctacaccg aggcgcacgg 850

cctggcacgc ctaactggcc acctcagcct ggctccgcc gccacctgt 900

acctggggccg gccccaggac ttcateggc gagagccac ccccgccgc 950

tactgccacg gaggttttg ggtgctgctg tcgcgcatgc tgctgcaaca 1000

actgcgcccc cacctggaag gctgccgcaa cgacatcgtc agtgcgcgcc 1050

ctgacgagt gctgggtcgc tgcatctctg atgccaccgg ggtgggctgc 1100

actggtgacc acgagggggg gcactatagc catctggagc tgagccctgg 1150

ggagccagtg caggagggggg accctcattt ccgaagtgcc ctgacagccc 1200
accctgtgcg tgaccctgtg cacatgtacc agctgcacaa agctttcgcc 1250
cgagctgaac tggaacgcac gtaccaggag atccaggagt tacagtggga 1300
gatccagaat accagccatc tggccgttga tggggaccgg gcagctgctt 1350
ggcccgtggg tattccagca ccatcccgcc cggcctcccg ctttgaggtg 1400
ctgcgctggg actacttcac ggagcagcac gctttctcct gcgccgatgg 1450
ctcaccccg cgtccactgc gtggggctga ccgggctgat gtggccgatg 1500
ttctggggac agctctagag gagctgaacc gccgctacca cccggccttg 1550
cggctccaga agcagcagct ggtgaatggc taccgacgt ttgatccggc 1600
ccggggtatg gaatacacgc tggacttgca gctggaggca ctgaccccc 1650
agggaggccg ccggcccctc actcgccgag tgcagctgct ccggccgctg 1700
agccgcgtgg agatcttgcc tgtgccctat gtcactgagg cctcacgtct 1750
cactgtgctg ctgcctctag ctgcggctga gcgtgacctg gccctggct 1800
tcttgaggc ctttgccact gcagcactgg agcctggtga tgctgcggca 1850
gccctgacct tgctgctact gtatgagccg cgccaggccc agcgcgtggc 1900
ccatgcagat gtcttcgcac ctgtcaaggc ccacgtggca gagctggagc 1950
ggcgtttccc cggtgcccgg gtgccatggc tcagtgtgca gacagccgca 2000
ccctcaccac tgcgcctcat ggatctactc tccaagaagc acccgctgga 2050
cacactgttc ctgctggccg ggccagacac ggtgctcacg cctgacttcc 2100
tgaaccgctg ccgcatgcat gccatctccg gctggcaggc cttctttccc 2150
atgcatttcc aagccttcca cccagggtgtg gcccaccac aagggcctgg 2200
gccccagag ctgggcccgtg aactggccg ctttgatcgc caggcagcca 2250
gcgaggcctg cttctacaac tccgactacg tggcagcccg tgggcgcctg 2300
gcggcagcct cagaacaaga agaggagctg ctggagagcc tggatgtgta 2350
cgagctgttc ctccacttct ccagtctgca tgtgctgcgg gcggtggagc 2400
cggcgctgct gcagcgctac cggggccaga cgtgcagcgc gaggctcagt 2450
gaggacctgt accaccgctg cctccagagc gtgcttgagg gcctcggctc 2500
ccgaacccag ctggccatgc tactctttga acaggagcag ggcaacagca 2550

cctgacccca ccctgtcccc gtgggccgtg gcatggccac accccacccc 2600
 acttctcccc caaaaccaga gccacctgcc agcctcgctg ggcagggctg 2650
 gccgtagcca gacccaagc tggcccaactg gtcccccttc tggctctgtg 2700
 ggtccctggg ctctggacaa gcaactggggg acgtgcccc agagccaccc 2750
 acttctcatc ccaaaccag tttccctgcc ccctgacgct gctgattcgg 2800
 gctgtggcct ccacgtatct atgcagtaca gtctgcctga cgccagccct 2850
 gcctctgggc cctgggggct gggctgtaga agagttgttg ggaaggagg 2900
 gagctgagga gggggcatct cccaacttct cccttttgga ccctgccgaa 2950
 gctccctgcc ttaataaac tggccaagtg tggaaaaa 2988

<210> 326

<211> 775

<212> PRT

<213> Homo sapiens

<400> 326

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Arg | Ala | Ser | Leu | Leu | Leu | Ser | Val | Leu | Arg | Pro | Ala | Gly | Pro | 1 | 5 | 10 | 15 |
| Val | Ala | Val | Gly | Ile | Ser | Leu | Gly | Phe | Thr | Leu | Ser | Leu | Leu | Ser | 20 | 25 | 30 | |
| Val | Thr | Trp | Val | Glu | Glu | Pro | Cys | Gly | Pro | Gly | Pro | Pro | Gln | Pro | 35 | 40 | 45 | |
| Gly | Asp | Ser | Glu | Leu | Pro | Pro | Arg | Gly | Asn | Thr | Asn | Ala | Ala | Arg | 50 | 55 | 60 | |
| Arg | Pro | Asn | Ser | Val | Gln | Pro | Gly | Ala | Glu | Arg | Glu | Lys | Pro | Gly | 65 | 70 | 75 | |
| Ala | Gly | Glu | Gly | Ala | Gly | Glu | Asn | Trp | Glu | Pro | Arg | Val | Leu | Pro | 80 | 85 | 90 | |
| Tyr | His | Pro | Ala | Gln | Pro | Gly | Gln | Ala | Ala | Lys | Lys | Ala | Val | Arg | 95 | 100 | 105 | |
| Thr | Arg | Tyr | Ile | Ser | Thr | Glu | Leu | Gly | Ile | Arg | Gln | Arg | Leu | Leu | 110 | 115 | 120 | |
| Val | Ala | Val | Leu | Thr | Ser | Gln | Thr | Thr | Leu | Pro | Thr | Leu | Gly | Val | 125 | 130 | 135 | |
| Ala | Val | Asn | Arg | Thr | Leu | Gly | His | Arg | Leu | Glu | Arg | Val | Val | Phe | 140 | 145 | 150 | |
| Leu | Thr | Gly | Ala | Arg | Gly | Arg | Arg | Ala | Pro | Pro | Gly | Met | Ala | Val | 155 | 160 | 165 | |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Val Thr Leu Gly | Glu Glu Arg Pro Ile | Gly His Leu His Leu Ala | 170 | 175 | 180 |
| Leu Arg His Leu | Leu Glu Gln His Gly | Asp Asp Phe Asp Trp Phe | 185 | 190 | 195 |
| Phe Leu Val Pro | Asp Thr Thr Tyr Thr | Glu Ala His Gly Leu Ala | 200 | 205 | 210 |
| Arg Leu Thr Gly | His Leu Ser Leu Ala | Ser Ala Ala His Leu Tyr | 215 | 220 | 225 |
| Leu Gly Arg Pro | Gln Asp Phe Ile Gly | Gly Glu Pro Thr Pro Gly | 230 | 235 | 240 |
| Arg Tyr Cys His | Gly Gly Phe Gly Val | Leu Leu Ser Arg Met Leu | 245 | 250 | 255 |
| Leu Gln Gln Leu | Arg Pro His Leu Glu | Gly Cys Arg Asn Asp Ile | 260 | 265 | 270 |
| Val Ser Ala Arg | Pro Asp Glu Trp Leu | Gly Arg Cys Ile Leu Asp | 275 | 280 | 285 |
| Ala Thr Gly Val | Gly Cys Thr Gly Asp | His Glu Gly Val His Tyr | 290 | 295 | 300 |
| Ser His Leu Glu | Leu Ser Pro Gly Glu | Pro Val Gln Glu Gly Asp | 305 | 310 | 315 |
| Pro His Phe Arg | Ser Ala Leu Thr Ala | His Pro Val Arg Asp Pro | 320 | 325 | 330 |
| Val His Met Tyr | Gln Leu His Lys Ala | Phe Ala Arg Ala Glu Leu | 335 | 340 | 345 |
| Glu Arg Thr Tyr | Gln Glu Ile Gln Glu | Leu Gln Trp Glu Ile Gln | 350 | 355 | 360 |
| Asn Thr Ser His | Leu Ala Val Asp Gly | Asp Arg Ala Ala Ala Trp | 365 | 370 | 375 |
| Pro Val Gly Ile | Pro Ala Pro Ser Arg | Pro Ala Ser Arg Phe Glu | 380 | 385 | 390 |
| Val Leu Arg Trp | Asp Tyr Phe Thr Glu | Gln His Ala Phe Ser Cys | 395 | 400 | 405 |
| Ala Asp Gly Ser | Pro Arg Cys Pro Leu | Arg Gly Ala Asp Arg Ala | 410 | 415 | 420 |
| Asp Val Ala Asp | Val Leu Gly Thr Ala | Leu Glu Glu Leu Asn Arg | 425 | 430 | 435 |
| Arg Tyr His Pro | Ala Leu Arg Leu Gln | Lys Gln Gln Leu Val Asn | 440 | 445 | 450 |

| | | | |
|-----------------|---------------------|---------------------|-----|
| Gly Tyr Arg Arg | Phe Asp Pro Ala Arg | Gly Met Glu Tyr Thr | Leu |
| 455 | | 460 | 465 |
| Asp Leu Gln Leu | Glu Ala Leu Thr Pro | Gln Gly Gly Arg Arg | Pro |
| 470 | | 475 | 480 |
| Leu Thr Arg Arg | Val Gln Leu Leu Arg | Pro Leu Ser Arg Val | Glu |
| 485 | | 490 | 495 |
| Ile Leu Pro Val | Pro Tyr Val Thr Glu | Ala Ser Arg Leu Thr | Val |
| 500 | | 505 | 510 |
| Leu Leu Pro Leu | Ala Ala Ala Glu Arg | Asp Leu Ala Pro Gly | Phe |
| 515 | | 520 | 525 |
| Leu Glu Ala Phe | Ala Thr Ala Ala Leu | Glu Pro Gly Asp Ala | Ala |
| 530 | | 535 | 540 |
| Ala Ala Leu Thr | Leu Leu Leu Leu Tyr | Glu Pro Arg Gln Ala | Gln |
| 545 | | 550 | 555 |
| Arg Val Ala His | Ala Asp Val Phe Ala | Pro Val Lys Ala His | Val |
| 560 | | 565 | 570 |
| Ala Glu Leu Glu | Arg Arg Phe Pro Gly | Ala Arg Val Pro Trp | Leu |
| 575 | | 580 | 585 |
| Ser Val Gln Thr | Ala Ala Pro Ser Pro | Leu Arg Leu Met Asp | Leu |
| 590 | | 595 | 600 |
| Leu Ser Lys Lys | His Pro Leu Asp Thr | Leu Phe Leu Leu Ala | Gly |
| 605 | | 610 | 615 |
| Pro Asp Thr Val | Leu Thr Pro Asp Phe | Leu Asn Arg Cys Arg | Met |
| 620 | | 625 | 630 |
| His Ala Ile Ser | Gly Trp Gln Ala Phe | Phe Pro Met His Phe | Gln |
| 635 | | 640 | 645 |
| Ala Phe His Pro | Gly Val Ala Pro Pro | Gln Gly Pro Gly Pro | Pro |
| 650 | | 655 | 660 |
| Glu Leu Gly Arg | Asp Thr Gly Arg Phe | Asp Arg Gln Ala Ala | Ser |
| 665 | | 670 | 675 |
| Glu Ala Cys Phe | Tyr Asn Ser Asp Tyr | Val Ala Ala Arg Gly | Arg |
| 680 | | 685 | 690 |
| Leu Ala Ala Ala | Ser Glu Gln Glu Glu | Glu Leu Leu Glu Ser | Leu |
| 695 | | 700 | 705 |
| Asp Val Tyr Glu | Leu Phe Leu His Phe | Ser Ser Leu His Val | Leu |
| 710 | | 715 | 720 |
| Arg Ala Val Glu | Pro Ala Leu Leu Gln | Arg Tyr Arg Ala Gln | Thr |
| 725 | | 730 | 735 |

Cys Ser Ala Arg Leu Ser Glu Asp Leu Tyr His Arg Cys Leu Gln
740 745 750

Ser Val Leu Glu Gly Leu Gly Ser Arg Thr Gln Leu Ala Met Leu
755 760 765

Leu Phe Glu Gln Glu Gln Gly Asn Ser Thr
770 775

<210> 327

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 327

tggaaggctg ccgcaacgac aatc 24

<210> 328

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 328

ctgatgtggc cgatgttctg 20

<210> 329

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 329

atggctcagt gtgcagacag 20

<210> 330

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 330

gcatgctgct ccgtgaagta gtcc 24

<210> 331

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 331

atgcatggga aagaaggcct gccc 24

<210> 332

<211> 47

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 332

tgcaactggg accacgaggg ggtgcactat agccatctgg agctgag 47

<210> 333

<211> 1095

<212> DNA

<213> Homo sapiens

<400> 333

gctctggccg gccccggcga ttggtcaccg cccgctaggg gacagccctg 50
gcctcctctg attggcaagc gctggccacc tccccacacc cttgcgaaac 100
gctcccctag tggagaaaag gtagtagctat tagccaattc ggcagggccc 150
gcttttttaga agcttgattt cctttgaaga tgaaagacta gcggaagctc 200
tgccctctttc cccagtgggc gagggaaactc ggggcgattg gctgggaact 250
gtatccaccc aaatgtcacc gatttcttcc tatgcaggaa atgagcagac 300
ccatcaataa gaaatttctc agcctggccg aaaatggttg gccccacgaa 350
gccacgacaa ctggaggcaa agagggttgc tcaacgcccc gcctcattgg 400
aaaaccaa at cagatctggg acctatatag cgtggcgagg gcggggcgat 450
gattgtcgcg ctgcaccca ctgcagctgc gcacagtcgc atttctttcc 500
ccgcccctga gaccctgcag caccatctgt catggcggct gggctgtttg 550
gtttgagcgc tcgccgtctt ttggcggcag cggcgacgcg agggctcccg 600
gccgcccgcg tccgctggga atctagcttc tccaggactg tggtcgcccc 650
gtccgctgtg gcgggaaagc ggccccaga accgaccaca ccgtggcaag 700
aggaccacga acccgaggac gaaaacttgt atgagaagaa cccagactcc 750
catggttatg acaaggaccc cgttttggac gtctggaaca tgcgacttgt 800
cttcttcttt ggcgctctca tcatcctggt ccttggcagc acctttgtgg 850

cctatctgcc tgactacagg atgaaagagt ggtcccgccg cgaagctgag 900
 aggcttgtga aataccgaga ggccaatggc cttcccatca tggaatccaa 950
 ctgcttcgac cccagcaaga tccagctgcc agaggatgag tgaccagttg 1000
 ctaagtgggg ctcaagaagc accgccttcc ccacccctg cctgccattc 1050
 tgacctcttc tcagagcacc taattaaagg ggctgaaagt ctgaa 1095

<210> 334
 <211> 153
 <212> PRT
 <213> Homo sapiens

<400> 334
 Met Ala Ala Gly Leu Phe Gly Leu Ser Ala Arg Arg Leu Leu Ala
 1 5 10 15
 Ala Ala Ala Thr Arg Gly Leu Pro Ala Ala Arg Val Arg Trp Glu
 20 25 30
 Ser Ser Phe Ser Arg Thr Val Val Ala Pro Ser Ala Val Ala Gly
 35 40 45
 Lys Arg Pro Pro Glu Pro Thr Thr Pro Trp Gln Glu Asp Pro Glu
 50 55 60
 Pro Glu Asp Glu Asn Leu Tyr Glu Lys Asn Pro Asp Ser His Gly
 65 70 75
 Tyr Asp Lys Asp Pro Val Leu Asp Val Trp Asn Met Arg Leu Val
 80 85 90
 Phe Phe Phe Gly Val Ser Ile Ile Leu Val Leu Gly Ser Thr Phe
 95 100 105
 Val Ala Tyr Leu Pro Asp Tyr Arg Met Lys Glu Trp Ser Arg Arg
 110 115 120
 Glu Ala Glu Arg Leu Val Lys Tyr Arg Glu Ala Asn Gly Leu Pro
 125 130 135
 Ile Met Glu Ser Asn Cys Phe Asp Pro Ser Lys Ile Gln Leu Pro
 140 145 150
 Glu Asp Glu

<210> 335
 <211> 442
 <212> DNA
 <213> Homo sapiens

<400> 335
 ggcggtggg ctgtttgggt tgagcgctcg ccgtcttttg gcggcagcgg 50

cgacgcgagg gctcccggcc gcccgcgctcc gctgggaatc tagcttctcc 100
aggactgtgg tcgccccgtc cgctgtggcg ggaaagcggc cccagaacc 150
gaccacaccg tggcaagagg acccagaacc cgaggacgaa aacttgtatg 200
agaagaacc agactcccat ggttatgaca aggaccccg tttggacgtc 250
tggaacatgc gacttgtctt cttctttggc gtctccatca tcctggtcct 300
tggcagcacc tttgtggcct atctgcctga ctacaggatg aaagagtgg 350
cccgccgga agctgagagg cttgtgaaat accgagaggc caatggcctt 400
cccatcatgg aatccaactg cttcgacccc agcaagatcc ag 442

<210> 336

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 336

ctgagaccct gcagaccat ctg 23

<210> 337

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 337

ggtgcttctt gagccccact tagc 24

<210> 338

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 338

aatctagctt ctccaggact gtggtcgccc cgtccgctgt 40

<210> 339

<211> 2162

<212> DNA

<213> Homo sapiens

<400> 339

gcggcggtta tgccgcttgc tctgctcgtc ctgttgctcc tggggcccg 50

cggtctggtgc cttgcagaac cccacgcga cagcctgcgg gaggaacttg 100
tcatcacccc gctgccttcc ggggacgtag ccgccacatt ccagttccgc 150
acgcgctggg attcggagct tcagcgggaa ggagtgtccc attacaggct 200
ctttcccaaa gccctggggc agctgatctc caagtattct ctacgggagc 250
tgcacctgtc attcacacaa ggcttttggg ggacccgata ctggggggcca 300
cccttcctgc agggcccatc aggtgcagag ctgtgggtct ggttccaaga 350
cactgtcact gatgtggata aatcttggaa ggagctcagt aatgtcctct 400
cagggatctt ctgcgcctct ctcaacttca tcgactccac caacacagtc 450
actccactg cctccttcaa acccctgggt ctggccaatg aactgacca 500
ctactttctg cgctatgctg tgctgccgcg ggaggtggtc tgcaccgaaa 550
acctacccc ctggaagaag ctcttgcct gtagttccaa ggcaggcctc 600
tctgtgctgc tgaaggcaga tcgcttgttc cacaccagct accactccca 650
ggcagtgcac atccgccctg tttgcagaaa tgcacgctgt actagcatct 700
cctgggagct gaggcagacc ctgtcagttg tatttgatgc cttcatcacg 750
gggcagggaa agaaagactg gtccctcttc cggatgttct cccgaaccct 800
cacggagccc tgccccctgg cttcagagag ccgagtctat gtggacatca 850
ccacctaaa ccaggacaac gagacattag aggtgcaccc acccccgacc 900
actacatatc aggacgtcat cctaggcact cggaagacct atgccatcta 950
tgacttgctt gacaccgcca tgatcaacaa ctctcgaaac ctcaacatcc 1000
agctcaagtg gaagagaccc ccagagaatg agggccccc agtgcccttc 1050
ctgcatgccc agcggtagct gagtggctat gggctgcaga agggggagct 1100
gagcactg ctgtacaaca cccaccata ccgggccttc ccggtgctgc 1150
tgctggacac cgtaccctgg tatctgcggc tgtatgtgca caccctcacc 1200
atcacctcca agggcaagga gaacaaacca agttacatcc actaccagcc 1250
tgcccaggac cggctgcaac cccacctcct ggagatgctg attcagctgc 1300
cggccaactc agtcaccaag gtttccatcc agtttgagcg ggcgctgctg 1350
aagtggaccg agtacacgcc agatcctaac catggcttct atgtcagccc 1400
atctgtcctc agcgccttg tgcccagcat ggtagcagcc aagccagtgg 1450

```

actggaaga gagtcccctc ttcaacagcc tgttcccagt ctctgatggc 1500
tctaactact ttgtgcggct ctacacggag ccgctgctgg tgaacctgcc 1550
gacaccggac ttcagcatgc cctacaacgt gatctgcctc acgtgcactg 1600
tggtggccgt gtgctacggc tccttctaca atctcctcac ccgaaccttc 1650
cacatcgagg agccccgcac aggtggcctg gccaaagcggc tggccaacct 1700
tatccggcgc gcccgagggtg tccccccact ctgattcttg ccctttccag 1750
cagctgcagc tgccgtttct ctctggggag gggagcccaa gggctgtttc 1800
tgccacttgc tctcctcaga gttggctttt gaaccaaagt gccctggacc 1850
aggtcagggc ctacagctgt gttgtccagt acaggagcca cgagccaaat 1900
gtggcatttg aatttgaatt aacttagaaa ttcatttcct cacctgtagt 1950
ggccacctct atattgaggt gctcaataag caaaagtggc cggtggctgc 2000
tgtattggac agcacagaaa aagatttcca tcaccacaga aaggtcggct 2050
ggcagcactg gccaaagtga tgggggtgtgc tacacagtgt atgtcactgt 2100
gtagtggatg gagtttactg tttgtggaat aaaaacggct gtttccgtgg 2150
aaaaaaaaaa aa 2162

```

<210> 340

<211> 574

<212> PRT

<213> Homo sapiens

<400> 340

```

Met Pro Leu Ala Leu Leu Val Leu Leu Leu Leu Gly Pro Gly Gly
  1              5              10              15

Trp Cys Leu Ala Glu Pro Pro Arg Asp Ser Leu Arg Glu Glu Leu
          20              25              30

Val Ile Thr Pro Leu Pro Ser Gly Asp Val Ala Ala Thr Phe Gln
          35              40              45

Phe Arg Thr Arg Trp Asp Ser Glu Leu Gln Arg Glu Gly Val Ser
          50              55              60

His Tyr Arg Leu Phe Pro Lys Ala Leu Gly Gln Leu Ile Ser Lys
          65              70              75

Tyr Ser Leu Arg Glu Leu His Leu Ser Phe Thr Gln Gly Phe Trp
          80              85              90

Arg Thr Arg Tyr Trp Gly Pro Pro Phe Leu Gln Ala Pro Ser Gly
          95              100             105

```

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Ala | Glu | Leu | Trp | Val | Trp | Phe | Gln | Asp | Thr | Val | Thr | Asp | Val | Asp | | 110 | 115 | 120 |
| Lys | Ser | Trp | Lys | Glu | Leu | Ser | Asn | Val | Leu | Ser | Gly | Ile | Phe | Cys | | 125 | 130 | 135 |
| Ala | Ser | Leu | Asn | Phe | Ile | Asp | Ser | Thr | Asn | Thr | Val | Thr | Pro | Thr | | 140 | 145 | 150 |
| Ala | Ser | Phe | Lys | Pro | Leu | Gly | Leu | Ala | Asn | Asp | Thr | Asp | His | Tyr | | 155 | 160 | 165 |
| Phe | Leu | Arg | Tyr | Ala | Val | Leu | Pro | Arg | Glu | Val | Val | Cys | Thr | Glu | | 170 | 175 | 180 |
| Asn | Leu | Thr | Pro | Trp | Lys | Lys | Leu | Leu | Pro | Cys | Ser | Ser | Lys | Ala | | 185 | 190 | 195 |
| Gly | Leu | Ser | Val | Leu | Leu | Lys | Ala | Asp | Arg | Leu | Phe | His | Thr | Ser | | 200 | 205 | 210 |
| Tyr | His | Ser | Gln | Ala | Val | His | Ile | Arg | Pro | Val | Cys | Arg | Asn | Ala | | 215 | 220 | 225 |
| Arg | Cys | Thr | Ser | Ile | Ser | Trp | Glu | Leu | Arg | Gln | Thr | Leu | Ser | Val | | 230 | 235 | 240 |
| Val | Phe | Asp | Ala | Phe | Ile | Thr | Gly | Gln | Gly | Lys | Lys | Asp | Trp | Ser | | 245 | 250 | 255 |
| Leu | Phe | Arg | Met | Phe | Ser | Arg | Thr | Leu | Thr | Glu | Pro | Cys | Pro | Leu | | 260 | 265 | 270 |
| Ala | Ser | Glu | Ser | Arg | Val | Tyr | Val | Asp | Ile | Thr | Thr | Tyr | Asn | Gln | | 275 | 280 | 285 |
| Asp | Asn | Glu | Thr | Leu | Glu | Val | His | Pro | Pro | Pro | Thr | Thr | Thr | Tyr | | 290 | 295 | 300 |
| Gln | Asp | Val | Ile | Leu | Gly | Thr | Arg | Lys | Thr | Tyr | Ala | Ile | Tyr | Asp | | 305 | 310 | 315 |
| Leu | Leu | Asp | Thr | Ala | Met | Ile | Asn | Asn | Ser | Arg | Asn | Leu | Asn | Ile | | 320 | 325 | 330 |
| Gln | Leu | Lys | Trp | Lys | Arg | Pro | Pro | Glu | Asn | Glu | Ala | Pro | Pro | Val | | 335 | 340 | 345 |
| Pro | Phe | Leu | His | Ala | Gln | Arg | Tyr | Val | Ser | Gly | Tyr | Gly | Leu | Gln | | 350 | 355 | 360 |
| Lys | Gly | Glu | Leu | Ser | Thr | Leu | Leu | Tyr | Asn | Thr | His | Pro | Tyr | Arg | | 365 | 370 | 375 |
| Ala | Phe | Pro | Val | Leu | Leu | Leu | Asp | Thr | Val | Pro | Trp | Tyr | Leu | Arg | | 380 | 385 | 390 |

| | | | |
|---|-----|-----|-----|
| Leu Tyr Val His Thr Leu Thr Ile Thr Ser Lys Gly Lys Glu Asn | 395 | 400 | 405 |
| Lys Pro Ser Tyr Ile His Tyr Gln Pro Ala Gln Asp Arg Leu Gln | 410 | 415 | 420 |
| Pro His Leu Leu Glu Met Leu Ile Gln Leu Pro Ala Asn Ser Val | 425 | 430 | 435 |
| Thr Lys Val Ser Ile Gln Phe Glu Arg Ala Leu Leu Lys Trp Thr | 440 | 445 | 450 |
| Glu Tyr Thr Pro Asp Pro Asn His Gly Phe Tyr Val Ser Pro Ser | 455 | 460 | 465 |
| Val Leu Ser Ala Leu Val Pro Ser Met Val Ala Ala Lys Pro Val | 470 | 475 | 480 |
| Asp Trp Glu Glu Ser Pro Leu Phe Asn Ser Leu Phe Pro Val Ser | 485 | 490 | 495 |
| Asp Gly Ser Asn Tyr Phe Val Arg Leu Tyr Thr Glu Pro Leu Leu | 500 | 505 | 510 |
| Val Asn Leu Pro Thr Pro Asp Phe Ser Met Pro Tyr Asn Val Ile | 515 | 520 | 525 |
| Cys Leu Thr Cys Thr Val Val Ala Val Cys Tyr Gly Ser Phe Tyr | 530 | 535 | 540 |
| Asn Leu Leu Thr Arg Thr Phe His Ile Glu Glu Pro Arg Thr Gly | 545 | 550 | 555 |
| Gly Leu Ala Lys Arg Leu Ala Asn Leu Ile Arg Arg Ala Arg Gly | 560 | 565 | 570 |

Val Pro Pro Leu

<210> 341
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 341
 tggacaccgt accctgggtat ctgc 24

 <210> 342
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> Artificial Sequence

<222> 1-24
<223> Synthetic oligonucleotide probe

<400> 342
ccaactctga ggagagcaag tggc 24

<210> 343
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 343
tgtatgtgca caccctcacc atcacctcca agggcaagga gaac 44

<210> 344
<211> 762
<212> DNA
<213> Homo sapiens

<400> 344
caacatgggg tccagcagct tcttgggtcct catgggtgtct ctcgttcttg 50

tgaccctggg ggctgtggaa ggagttaaag agggatataga gaaagcaggg 100

gtttgcccag ctgacaacgt acgctgcttc aagtccgatc ctccccagtg 150

tcacacagac caggactgtc tgggggaaag gaagtgttgt tacctgcact 200

gtggcttcaa gtgtgtgatt cctgtgaagg aactggaaga aggaggaaac 250

aaggatgaag atgtgtcaag gccataccct gagccaggat gggaggccaa 300

gtgtccaggc tcctcctcta ccagggtgtcc tcagaaatga tgctgggtcc 350

tttctacctc tgggggtcac tctcacttgg cacctgcccc tgagggtcct 400

gagacttgga atatggaaga agcaataccc aacccaccca aagaaaacct 450

gagcttgaag tcctttttccc caaaaagagg gaagagtcac aaaaagtcca 500

gaccccaggg acggtacttt ccctctctac ctgggtgctcc tccctaattgc 550

tcatgaatgg acccctcatg aatgaaacca gtgcccttat aagagacccc 600

aaagagctgc cttgcccttc tgcaatgtgt gatcacagct agaaggcact 650

gtcagagaag agaaactggg cctcaccaga tgctgaatct gctgggtgct 700

tgatcttgga ctcccagcc tctagaactg taagaaataa atatttgctg 750

tttataatcc aa 762

<210> 345
<211> 111

<212> PRT

<213> Homo sapiens

<400> 345

```
Met Gly Ser Ser Ser Phe Leu Val Leu Met Val Ser Leu Val Leu
  1             5             10             15

Val Thr Leu Val Ala Val Glu Gly Val Lys Glu Gly Ile Glu Lys
             20             25             30

Ala Gly Val Cys Pro Ala Asp Asn Val Arg Cys Phe Lys Ser Asp
             35             40             45

Pro Pro Gln Cys His Thr Asp Gln Asp Cys Leu Gly Glu Arg Lys
             50             55             60

Cys Cys Tyr Leu His Cys Gly Phe Lys Cys Val Ile Pro Val Lys
             65             70             75

Glu Leu Glu Glu Gly Gly Asn Lys Asp Glu Asp Val Ser Arg Pro
             80             85             90

Tyr Pro Glu Pro Gly Trp Glu Ala Lys Cys Pro Gly Ser Ser Ser
             95             100            105

Thr Arg Cys Pro Gln Lys
             110
```

<210> 346

<211> 2528

<212> DNA

<213> Homo sapiens

<400> 346

```
aaactcagca cttgccggag tggctcattg ttaagacaaa ggggtgtgcac 50

ttcctggcca ggaaacctga gcggtgagac tcccagctgc ctacatcaag 100

gccccaggac atgcagaacc ttcctctaga acccgaccca ccaccatgag 150

gtcctgcctg tggagatgca ggcacctgag ccaaggcgtc cagtggctct 200

tgcttctggc tgtcctggtc ttctttctct tcgccttgcc ctcttttatt 250

aaggagcctc aaacaaagcc ttccaggcat caacgcacag agaacattaa 300

agaaaggctc ctacagtccc tggcaaagcc taagtcccag gcaccacaaa 350

gggcgaggag gacaaccatc tatgcagagc cagcgccaga gaacaatgcc 400

ctcaacacac aaaccagcc caaggccac accaccggag acagaggaaa 450

ggaggccaac caggcaccgc cggaggagca ggacaagggtg cccacacag 500

cacagagggc agcatggaag agcccagaaa aagagaaaac catggtgaac 550

aactgtcac ccagagggca agatgcaggg atggcctctg gcaggacaga 600
```

ggcacaatca tggaagagcc aggacacaaa gacgacccaa ggaaatgggg 650
gccagaccag gaagctgacg gcctccagga cgggtgtcaga gaagcaccag 700
ggcaaagcgg caaccacagc caagacgctc attcccaaaa gtcagcacag 750
aatgctggct cccacaggag cagtgtcaac aaggacgaga cagaaaggag 800
tgaccacagc agtcatccca cctaaggaga agaaacctca ggccacccca 850
ccccctgccc ctttccagag cccacgacg cagagaaacc aaagactgaa 900
ggccgccaac ttcaaactctg agcctcgggtg ggattttgag gaaaaataca 950
gcttcgaaat aggaggcctt cagacgactt gccctgactc tgtgaagatc 1000
aaagcctcca agtcgctgtg gctccagaaa ctctttctgc ccaacctcac 1050
tctcttctctg gactccagac acttcaacca gagtgagtgg gaccgcctgg 1100
aacactttgc accacccttt ggcttcatgg agctcaacta ctccttggtg 1150
cagaaggctg tgacacgctt ccctccagtg cccagcagc agctgctcct 1200
ggccagcctc cccgctggga gcctccgggtg catcacctgt gccgtggtgg 1250
gcaacggggg catcctgaac aactcccaca tgggccagga gatagacagt 1300
cacgactacg tgttccgatt gagcggagct ctcatataag gctacgaaca 1350
ggatgtgggg actcggacat ccttctacgg ctttaccgcc ttctccctga 1400
cccagtcact ccttatattg ggcaatcggg gtttcaagaa cgtgcctctt 1450
gggaaggacg tccgctactt gcacttctctg gaaggcaccg gggactatga 1500
gtggctggaa gcactgctta tgaatcagac ggtgatgtca aaaaaccttt 1550
tctggttcag gcacagaccc caggaagctt ttcgggaagc cctgcacatg 1600
gacaggtacc tgttgctgca cccagacttt ctccgataca tgaagaacag 1650
gtttctgagg tctaagaccc tggatgggtg cactggagg atataccgcc 1700
ccaccactgg ggccctcctg ctgctcactg cccttcagct ctgtgaccag 1750
gtgagtgctt atggcttcat cactgagggc catgagcgct tttctgatca 1800
ctactatgat acatcatgga agcgggtgat cttttacata aaccatgact 1850
tcaagctgga gagagaagtc tggaagcggc tacacgatga agggataatc 1900
cggctgtacc agcgtcctgg tcccggaaact gccaaagcca agaactgacc 1950
ggggccaggg ctgccatggt ctccttgccct gtcceaaggc acaggataca 2000

gtgggaatct tgagactcct tggccatttc ccatggctca gactaagctc 2050
 caagcccttc aggagttcca agggaaact tgaaccatgg acaagactct 2100
 ctcaagatgg caaatggcta attgaggttc tgaagttctt cagtacattg 2150
 ctgtaggtcc tgaggccagg gatttttaat taaatggggt gatgggtggc 2200
 caataccaca attcctgctg aaaaacactc ttccagtcca aaagcttctt 2250
 gatacagaaa aaagagcctg gatttacaga aacatataga tctggtttga 2300
 attccagatc gagtttacag ttgtgaaatc ttgaaggtat tacttaactt 2350
 cactacagat tgtctagaag acctttctag gagttatctg attctagaag 2400
 ggtctatact tgtccttgct ttttaagctat ttgacaactc tacgtgttgt 2450
 agaaaactga taataataca aatgattggt gtccatggaa aggcaaataa 2500
 attttctaca gtgaaaaaaaa aaaaaaaaa 2528

<210> 347

<211> 600

<212> PRT

<213> Homo sapiens

<400> 347

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Ser | Cys | Leu | Trp | Arg | Cys | Arg | His | Leu | Ser | Gln | Gly | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Gln | Trp | Ser | Leu | Leu | Leu | Ala | Val | Leu | Val | Phe | Phe | Leu | Phe | Ala |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Leu | Pro | Ser | Phe | Ile | Lys | Glu | Pro | Gln | Thr | Lys | Pro | Ser | Arg | His |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Gln | Arg | Thr | Glu | Asn | Ile | Lys | Glu | Arg | Ser | Leu | Gln | Ser | Leu | Ala |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Lys | Pro | Lys | Ser | Gln | Ala | Pro | Thr | Arg | Ala | Arg | Arg | Thr | Thr | Ile |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Tyr | Ala | Glu | Pro | Ala | Pro | Glu | Asn | Asn | Ala | Leu | Asn | Thr | Gln | Thr |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Gln | Pro | Lys | Ala | His | Thr | Thr | Gly | Asp | Arg | Gly | Lys | Glu | Ala | Asn |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Gln | Ala | Pro | Pro | Glu | Glu | Gln | Asp | Lys | Val | Pro | His | Thr | Ala | Gln |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Arg | Ala | Ala | Trp | Lys | Ser | Pro | Glu | Lys | Glu | Lys | Thr | Met | Val | Asn |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Thr | Leu | Ser | Pro | Arg | Gly | Gln | Asp | Ala | Gly | Met | Ala | Ser | Gly | Arg |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Thr | Glu | Ala | Gln | Ser | Trp | Lys | Ser | Gln | Asp | Thr | Lys | Thr | Thr | Gln | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Gly | Asn | Gly | Gly | Gln | Thr | Arg | Lys | Leu | Thr | Ala | Ser | Arg | Thr | Val | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Ser | Glu | Lys | His | Gln | Gly | Lys | Ala | Ala | Thr | Thr | Ala | Lys | Thr | Leu | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ile | Pro | Lys | Ser | Gln | His | Arg | Met | Leu | Ala | Pro | Thr | Gly | Ala | Val | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Ser | Thr | Arg | Thr | Arg | Gln | Lys | Gly | Val | Thr | Thr | Ala | Val | Ile | Pro | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Pro | Lys | Glu | Lys | Lys | Pro | Gln | Ala | Thr | Pro | Pro | Pro | Ala | Pro | Phe | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Gln | Ser | Pro | Thr | Thr | Gln | Arg | Asn | Gln | Arg | Leu | Lys | Ala | Ala | Asn | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Phe | Lys | Ser | Glu | Pro | Arg | Trp | Asp | Phe | Glu | Glu | Lys | Tyr | Ser | Phe | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Glu | Ile | Gly | Gly | Leu | Gln | Thr | Thr | Cys | Pro | Asp | Ser | Val | Lys | Ile | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Lys | Ala | Ser | Lys | Ser | Leu | Trp | Leu | Gln | Lys | Leu | Phe | Leu | Pro | Asn | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Leu | Thr | Leu | Phe | Leu | Asp | Ser | Arg | His | Phe | Asn | Gln | Ser | Glu | Trp | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Asp | Arg | Leu | Glu | His | Phe | Ala | Pro | Pro | Phe | Gly | Phe | Met | Glu | Leu | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Asn | Tyr | Ser | Leu | Val | Gln | Lys | Val | Val | Thr | Arg | Phe | Pro | Pro | Val | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Pro | Gln | Gln | Gln | Leu | Leu | Leu | Ala | Ser | Leu | Pro | Ala | Gly | Ser | Leu | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Arg | Cys | Ile | Thr | Cys | Ala | Val | Val | Gly | Asn | Gly | Gly | Ile | Leu | Asn | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Asn | Ser | His | Met | Gly | Gln | Glu | Ile | Asp | Ser | His | Asp | Tyr | Val | Phe | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Arg | Leu | Ser | Gly | Ala | Leu | Ile | Lys | Gly | Tyr | Glu | Gln | Asp | Val | Gly | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Thr | Arg | Thr | Ser | Phe | Tyr | Gly | Phe | Thr | Ala | Phe | Ser | Leu | Thr | Gln | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Ser | Leu | Leu | Ile | Leu | Gly | Asn | Arg | Gly | Phe | Lys | Asn | Val | Pro | Leu | |
| | | | | 425 | | | | | 430 | | | | | 435 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gly | Lys | Asp | Val | Arg | Tyr | Leu | His | Phe | Leu | Glu | Gly | Thr | Arg | Asp | |
| | | | | 440 | | | | | 445 | | | | | 450 | |
| Tyr | Glu | Trp | Leu | Glu | Ala | Leu | Leu | Met | Asn | Gln | Thr | Val | Met | Ser | |
| | | | | 455 | | | | | 460 | | | | | 465 | |
| Lys | Asn | Leu | Phe | Trp | Phe | Arg | His | Arg | Pro | Gln | Glu | Ala | Phe | Arg | |
| | | | | 470 | | | | | 475 | | | | | 480 | |
| Glu | Ala | Leu | His | Met | Asp | Arg | Tyr | Leu | Leu | Leu | His | Pro | Asp | Phe | |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Leu | Arg | Tyr | Met | Lys | Asn | Arg | Phe | Leu | Arg | Ser | Lys | Thr | Leu | Asp | |
| | | | | 500 | | | | | 505 | | | | | 510 | |
| Gly | Ala | His | Trp | Arg | Ile | Tyr | Arg | Pro | Thr | Thr | Gly | Ala | Leu | Leu | |
| | | | | 515 | | | | | 520 | | | | | 525 | |
| Leu | Leu | Thr | Ala | Leu | Gln | Leu | Cys | Asp | Gln | Val | Ser | Ala | Tyr | Gly | |
| | | | | 530 | | | | | 535 | | | | | 540 | |
| Phe | Ile | Thr | Glu | Gly | His | Glu | Arg | Phe | Ser | Asp | His | Tyr | Tyr | Asp | |
| | | | | 545 | | | | | 550 | | | | | 555 | |
| Thr | Ser | Trp | Lys | Arg | Leu | Ile | Phe | Tyr | Ile | Asn | His | Asp | Phe | Lys | |
| | | | | 560 | | | | | 565 | | | | | 570 | |
| Leu | Glu | Arg | Glu | Val | Trp | Lys | Arg | Leu | His | Asp | Glu | Gly | Ile | Ile | |
| | | | | 575 | | | | | 580 | | | | | 585 | |
| Arg | Leu | Tyr | Gln | Arg | Pro | Gly | Pro | Gly | Thr | Ala | Lys | Ala | Lys | Asn | |
| | | | | 590 | | | | | 595 | | | | | 600 | |

<210> 348
 <211> 496
 <212> DNA
 <213> Homo sapiens

<400> 348
 cgatgcgcgg acccgggcac cccctcctcc tggggctgct gctggtgctg 50
 gggccttcgc cggagcagcg agtggaaatt gttcctcgag atctgaggat 100
 gaaggacaag tttctaaaac accttacagg ccctctttat tttagtccaa 150
 agtgcagcaa acacttccat agactttatc acaacaccag agactgcacc 200
 attcctgcat actataaaag atgcgccagg cttcttacct ggctggctgt 250
 cagtccagtg tgcattggagg ataagtgagc agaccgtaca ggagcagcac 300
 accaggagcc atgagaagtg ccttggaac caacagggaa acagaactat 350
 ctttatacac atcccctcat ggacaagaga tttatTTTTG cagacagact 400
 cttccataag tcctttgagt tttgtatgtt gttgacagtt tgcagatata 450

tattcgataa atcagtgtac ttgacagtgt tatctgtcac ttatatt 496

<210> 349

<211> 91

<212> PRT

<213> Homo sapiens

<400> 349

Met Arg Gly Pro Gly His Pro Leu Leu Leu Gly Leu Leu Leu Val
1 5 10 15

Leu Gly Pro Ser Pro Glu Gln Arg Val Glu Ile Val Pro Arg Asp
20 25 30

Leu Arg Met Lys Asp Lys Phe Leu Lys His Leu Thr Gly Pro Leu
35 40 45

Tyr Phe Ser Pro Lys Cys Ser Lys His Phe His Arg Leu Tyr His
50 55 60

Asn Thr Arg Asp Cys Thr Ile Pro Ala Tyr Tyr Lys Arg Cys Ala
65 70 75

Arg Leu Leu Thr Arg Leu Ala Val Ser Pro Val Cys Met Glu Asp
80 85 90

Lys

<210> 350

<211> 1141

<212> DNA

<213> Homo sapiens

<400> 350

gggctggggc ccgccgcagc tccagctggc cggcttggtc ctgcgggtccc 50

ttctctggga ggcccgaccc cggccgcgcc cagccccac catgccaccc 100

gcggggctcc gccggggcgc gccgctcacc gcaatcgctc tgttggtgct 150

gggggctccc ctggtgctgg ccggcgagga ctgcctgtgg tacctggacc 200

ggaatggctc ctggcatccg gggtttaact gcgagttctt caccttctgc 250

tgcgggacct gctaccatcg gtactgctgc agggacctga ccttgcttat 300

caccgagagg cagcagaagc actgcctggc cttcagcccc aagaccatag 350

caggcatcgc ctcagctgtg atcctctttg ttgctgtggt tgccaccacc 400

atctgctgct tcctctgttc ctgttgctac ctgtaccgcc ggcgccagca 450

gctccagagc ccatttgaag gccaggagat tccaatgaca ggcatcccag 500

tgcagccagt atacccatac cccaggacc ccaaagctgg ccctgcaccc 550

ccacagcctg gcttcatgta cccacctagt ggtcctgctc cccaatatcc 600
 actctacca gctgggcccc cagtctacaa ccctgcagct cctcctccct 650
 atatgccacc acagccctct taccggggag cctgaggaac cagccatgtc 700
 tctgctgccc cttcagtgat gccaaccttg ggagatgccc tcctcctgta 750
 cctgcatctg gtcctggggg tggcaggagt cctccagcca ccaggcccca 800
 gaccaagcca agccctgggc cctactgggg acagagcccc aggggaagtgg 850
 aacaggagct gaactagaac tatgaggggt tggggggagg gcttgggaatt 900
 atgggctatt tttactgggg gcaagggagg gagatgacag cctgggtcac 950
 agtgccctgt ttcaaatagt ccctctgctc ccaagatccc agccaggaag 1000
 gctggggccc tactgtttgt ccctctggg ctgggggtggg gggagggagg 1050
 aggttccgtc agcagctggc agtagccctc ctctctggct gcccactgg 1100
 ccacatctct ggctgctag attaaagctg taaagacaaa a 1141

<210> 351

<211> 197

<212> PRT

<213> Homo sapiens

<400> 351

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Pro | Pro | Ala | Gly | Leu | Arg | Arg | Ala | Ala | Pro | Leu | Thr | Ala | Ile |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ala | Leu | Leu | Val | Leu | Gly | Ala | Pro | Leu | Val | Leu | Ala | Gly | Glu | Asp |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Cys | Leu | Trp | Tyr | Leu | Asp | Arg | Asn | Gly | Ser | Trp | His | Pro | Gly | Phe |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Asn | Cys | Glu | Phe | Phe | Thr | Phe | Cys | Cys | Gly | Thr | Cys | Tyr | His | Arg |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Tyr | Cys | Cys | Arg | Asp | Leu | Thr | Leu | Leu | Ile | Thr | Glu | Arg | Gln | Gln |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Lys | His | Cys | Leu | Ala | Phe | Ser | Pro | Lys | Thr | Ile | Ala | Gly | Ile | Ala |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ser | Ala | Val | Ile | Leu | Phe | Val | Ala | Val | Val | Ala | Thr | Thr | Ile | Cys |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Cys | Phe | Leu | Cys | Ser | Cys | Cys | Tyr | Leu | Tyr | Arg | Arg | Arg | Gln | Gln |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Leu | Gln | Ser | Pro | Phe | Glu | Gly | Gln | Glu | Ile | Pro | Met | Thr | Gly | Ile |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Val | Gln | Pro | Val | Tyr | Pro | Tyr | Pro | Gln | Asp | Pro | Lys | Ala | Gly |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Pro | Ala | Pro | Pro | Gln | Pro | Gly | Phe | Met | Tyr | Pro | Pro | Ser | Gly | Pro |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ala | Pro | Gln | Tyr | Pro | Leu | Tyr | Pro | Ala | Gly | Pro | Pro | Val | Tyr | Asn |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Pro | Ala | Ala | Pro | Pro | Pro | Tyr | Met | Pro | Pro | Gln | Pro | Ser | Tyr | Pro |
| | | | | 185 | | | | | 190 | | | | | 195 |

Gly Ala

<210> 352

<211> 3226

<212> DNA

<213> Homo sapiens

<400> 352

```

gggggagcta ggccggcggc agtggtggtg gcggcggcgc aagggtgagg 50
gcggccccag aacccaggt aggtagagca agaagatggt gtttctgccc 100
ctcaaagtgt cccttgcaac catgtcattt ctactttcct cactgttggc 150
tctcttaact gtgtccactc cttcatggtg tcagagcact gaagcatctc 200
caaaacgtag tgatgggaca ccatttcctt ggaataaaat acgacttcct 250
gagtacgtca tcccagttca ttatgatctc ttgatccatg caaaccttac 300
cacgtgacc tttctggggaa ccacgaaagt agaaatcaca gccagtcagc 350
ccaccagcac catcatcctg catagtcacc acctgcagat atctagggcc 400
accctcagga agggagctgg agagaggcta tcggaagaac ccctgcaggt 450
cctggaacac cccctcagg agcaaattgc actgctggct cccgagcccc 500
tccttgctgg gctcccgtac acagttgtca ttcactatgc tggcaatctt 550
tcggagactt tccacggatt ttacaaaagc acctacagaa ccaaggaagg 600
ggaactgagg atactagcat caacacaatt tgaaccact gcagctagaa 650
tggcctttcc ctgctttgat gaacctgcct tcaaagcaag tttctcaatc 700
aaaattagaa gagagccaag gcacctagcc atctccaata tgccattggt 750
gaaatctgtg actgttgctg aaggactcat agaagaccat tttgatgtca 800
ctgtgaagat gagcacctat ctggtggcct tcatcatttc agattttgag 850
tctgtcagca agataaccaa gagtggagtc aaggtttctg tttatgctgt 900

```


gccagacaag ataaatcaag cagattatgc actggatgct gcggtgactc 950
ttctagaatt ttatgaggat tatttcagca taccgtatcc cctacccaaa 1000
caagatcttg ctgctattcc cgactttcag tctgggtgcta tggaaaactg 1050
gggactgaca acatatagag aatctgctct gttgtttgat gcagaaaagt 1100
cttctgcatc aagtaagctt ggcatcacag tgactgtggc ccatgaactg 1150
gcccaccagt ggtttgggaa cctggtcact atggaatggg ggaatgatct 1200
ttggctaaat gaaggatttg ccaaatttat ggagtttgtg tctgtcagtg 1250
tgacccatcc tgaactgaaa gttggagatt atttctttgg caaatgtttt 1300
gacgcaatgg aggtagatgc tttaaattcc tcacaccctg tgtctacacc 1350
tgtggaaaat cctgctcaga tccgggagat gtttgatgat gtttcttatg 1400
ataagggagc ttgtattctg aatatgctaa gggagtatct tagcgctgac 1450
gcatttaaaa gtggtattgt acagtatctc cagaagcata gctataaaaa 1500
tacaaaaaac gaggacctgt gggatagtat ggcaagtatt tgccctacag 1550
atggtgtaaa agggatggat ggcttttgct ctagaagtca acattcatct 1600
tcatcctcac attggcatca ggaaggggtg gatgtgaaaa ccatgatgaa 1650
cacttggaca ctgcagaggg gttttcccct aataaccatc acagtgaggg 1700
ggaggaatgt acacatgaag caagagcact acatgaaggg ctctgacggc 1750
gccccggaca ctgggtacct gtggcatgtt ccattgacat tcatcaccag 1800
caaatccaac atggtccatc gatttttgct aaaaacaaa acagatgtgc 1850
tcatcctccc agaagagggtg gaatggatca aatttaatgt gggcatgaat 1900
ggctattaca ttgtgcatta cgaggatgat ggatgggact ctttgactgg 1950
ccttttaaaa ggaacacaca cagcagtcag cagtaatgat cgggcaagtc 2000
tcattaacaa tgcatttcag ctcgtcagca ttgggaagct gtccattgaa 2050
aaggccttgg atttatccct gtacttgaaa catgaaactg aaattatgcc 2100
cgtgtttcaa ggtttgaatg agctgattcc tatgtataag ttaatggaga 2150
aaagagatat gaatgaagtg gaaactcaat tcaaggcctt cctcatcagg 2200
ctgctaaggg acctcattga taagcagaca tggacagacg agggctcagt 2250
ctcagagcaa atgctgcgga gtgaactact actcctcgcc tgtgtgcaca 2300

actatcagcc gtgcgtacag agggcagaag gctatttcag aaagtggaag 2350
 gaatccaatg gaaacttgag cctgcctgtc gacgtgacct tggcagtgtt 2400
 tgctgtgggg gccagagca cagaaggctg ggattttctt tatagtaaatt 2450
 atcagttttc tttgtccagt actgagaaaa gccaaattga atttgccctc 2500
 tgcagaaccc aaaataagga aaagcttcaa tggctactag atgaaagctt 2550
 taagggagat aaaataaaaa ctcaggagtt tccacaaatt cttacactca 2600
 ttggcaggaa cccagtagga taccactgg cctggcaatt tctgaggaaa 2650
 aactggaaca aacttgtaca aaagtttgaa cttggctcat cttccatagc 2700
 ccacatggta atgggtacaa caaatcaatt ctccacaaga acacggcttg 2750
 aagaggtaaa aggattcttc agctctttga aagaaaatgg ttctcagctc 2800
 cgttgtgtcc aacagacaat tgaaaccatt gaagaaaaca tcggttggat 2850
 ggataagaat ttgataaaaa tcagagtgtg gctgcaaagt gaaaagcttg 2900
 aacgtatgta aaaattcctc ccttgcccgg ttcctgttat ctctaatac 2950
 caacattttg ttgagtgtat tttcaaacta gagatggctg ttttggtcc 3000
 aactggagat acttttttcc cttcaactca ttttttgact atccctgtga 3050
 aaagaatagc tgtagtttt tcatgaatgg gctttttcat gaatgggcta 3100
 tcgctaccat gtgttttgtt catcacaggt gttgccctgc aacgtaaacc 3150
 caagtgttg gttccctgcc acagaagaat aaagtacctt attcttctca 3200
 aaaaaaaaaa aaaaaaaaaa aaaaaa 3226

<210> 353
 <211> 941
 <212> PRT
 <213> Homo sapiens

<400> 353
 Met Val Phe Leu Pro Leu Lys Trp Ser Leu Ala Thr Met Ser Phe
 1 5 10 15
 Leu Leu Ser Ser Leu Leu Ala Leu Leu Thr Val Ser Thr Pro Ser
 20 25 30
 Trp Cys Gln Ser Thr Glu Ala Ser Pro Lys Arg Ser Asp Gly Thr
 35 40 45
 Pro Phe Pro Trp Asn Lys Ile Arg Leu Pro Glu Tyr Val Ile Pro
 50 55 60
 Val His Tyr Asp Leu Leu Ile His Ala Asn Leu Thr Thr Leu Thr

| 65 | | | | | | | | | | 70 | | | | | 75 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Phe | Trp | Gly | Thr | Thr | Lys | Val | Glu | Ile | Thr | Ala | Ser | Gln | Pro | Thr | | | | | |
| | | | | 80 | | | | | 85 | | | | | 90 | | | | | |
| Ser | Thr | Ile | Ile | Leu | His | Ser | His | His | Leu | Gln | Ile | Ser | Arg | Ala | | | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | | | |
| Thr | Leu | Arg | Lys | Gly | Ala | Gly | Glu | Arg | Leu | Ser | Glu | Glu | Pro | Leu | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Gln | Val | Leu | Glu | His | Pro | Pro | Gln | Glu | Gln | Ile | Ala | Leu | Leu | Ala | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Pro | Glu | Pro | Leu | Leu | Val | Gly | Leu | Pro | Tyr | Thr | Val | Val | Ile | His | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Tyr | Ala | Gly | Asn | Leu | Ser | Glu | Thr | Phe | His | Gly | Phe | Tyr | Lys | Ser | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Thr | Tyr | Arg | Thr | Lys | Glu | Gly | Glu | Leu | Arg | Ile | Leu | Ala | Ser | Thr | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Gln | Phe | Glu | Pro | Thr | Ala | Ala | Arg | Met | Ala | Phe | Pro | Cys | Phe | Asp | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Glu | Pro | Ala | Phe | Lys | Ala | Ser | Phe | Ser | Ile | Lys | Ile | Arg | Arg | Glu | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Pro | Arg | His | Leu | Ala | Ile | Ser | Asn | Met | Pro | Leu | Val | Lys | Ser | Val | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Thr | Val | Ala | Glu | Gly | Leu | Ile | Glu | Asp | His | Phe | Asp | Val | Thr | Val | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Lys | Met | Ser | Thr | Tyr | Leu | Val | Ala | Phe | Ile | Ile | Ser | Asp | Phe | Glu | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Ser | Val | Ser | Lys | Ile | Thr | Lys | Ser | Gly | Val | Lys | Val | Ser | Val | Tyr | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Ala | Val | Pro | Asp | Lys | Ile | Asn | Gln | Ala | Asp | Tyr | Ala | Leu | Asp | Ala | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Ala | Val | Thr | Leu | Leu | Glu | Phe | Tyr | Glu | Asp | Tyr | Phe | Ser | Ile | Pro | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Tyr | Pro | Leu | Pro | Lys | Gln | Asp | Leu | Ala | Ala | Ile | Pro | Asp | Phe | Gln | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| Ser | Gly | Ala | Met | Glu | Asn | Trp | Gly | Leu | Thr | Thr | Tyr | Arg | Glu | Ser | | | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | | | |
| Ala | Leu | Leu | Phe | Asp | Ala | Glu | Lys | Ser | Ser | Ala | Ser | Ser | Lys | Leu | | | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | | | |
| Gly | Ile | Thr | Val | Thr | Val | Ala | His | Glu | Leu | Ala | His | Gln | Trp | Phe | | | | | |

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 350 | | 355 | | 360 |
| Gly Asn Leu Val | Thr Met Glu Trp Trp | Asn Asp Leu Trp Leu | Asn | | |
| | 365 | | 370 | | 375 |
| Glu Gly Phe Ala | Lys Phe Met Glu Phe | Val Ser Val Ser Val | Thr | | |
| | 380 | | 385 | | 390 |
| His Pro Glu Leu | Lys Val Gly Asp Tyr | Phe Phe Gly Lys Cys | Phe | | |
| | 395 | | 400 | | 405 |
| Asp Ala Met Glu | Val Asp Ala Leu Asn | Ser Ser His Pro Val | Ser | | |
| | 410 | | 415 | | 420 |
| Thr Pro Val Glu | Asn Pro Ala Gln Ile | Arg Glu Met Phe Asp | Asp | | |
| | 425 | | 430 | | 435 |
| Val Ser Tyr Asp | Lys Gly Ala Cys Ile | Leu Asn Met Leu Arg | Glu | | |
| | 440 | | 445 | | 450 |
| Tyr Leu Ser Ala | Asp Ala Phe Lys Ser | Gly Ile Val Gln Tyr | Leu | | |
| | 455 | | 460 | | 465 |
| Gln Lys His Ser | Tyr Lys Asn Thr Lys | Asn Glu Asp Leu Trp | Asp | | |
| | 470 | | 475 | | 480 |
| Ser Met Ala Ser | Ile Cys Pro Thr Asp | Gly Val Lys Gly Met | Asp | | |
| | 485 | | 490 | | 495 |
| Gly Phe Cys Ser | Arg Ser Gln His Ser | Ser Ser Ser Ser His | Trp | | |
| | 500 | | 505 | | 510 |
| His Gln Glu Gly | Val Asp Val Lys Thr | Met Met Asn Thr Trp | Thr | | |
| | 515 | | 520 | | 525 |
| Leu Gln Arg Gly | Phe Pro Leu Ile Thr | Ile Thr Val Arg Gly | Arg | | |
| | 530 | | 535 | | 540 |
| Asn Val His Met | Lys Gln Glu His Tyr | Met Lys Gly Ser Asp | Gly | | |
| | 545 | | 550 | | 555 |
| Ala Pro Asp Thr | Gly Tyr Leu Trp His | Val Pro Leu Thr Phe | Ile | | |
| | 560 | | 565 | | 570 |
| Thr Ser Lys Ser | Asn Met Val His Arg | Phe Leu Leu Lys Thr | Lys | | |
| | 575 | | 580 | | 585 |
| Thr Asp Val Leu | Ile Leu Pro Glu Glu | Val Glu Trp Ile Lys | Phe | | |
| | 590 | | 595 | | 600 |
| Asn Val Gly Met | Asn Gly Tyr Tyr Ile | Val His Tyr Glu Asp | Asp | | |
| | 605 | | 610 | | 615 |
| Gly Trp Asp Ser | Leu Thr Gly Leu Leu | Lys Gly Thr His Thr | Ala | | |
| | 620 | | 625 | | 630 |
| Val Ser Ser Asn | Asp Arg Ala Ser Leu | Ile Asn Asn Ala Phe | Gln | | |

| 635 | | | | | 640 | | | | | 645 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Val | Ser | Ile | Gly | Lys | Leu | Ser | Ile | Glu | Lys | Ala | Leu | Asp | Leu |
| | | | | 650 | | | | | 655 | | | | | 660 |
| Ser | Leu | Tyr | Leu | Lys | His | Glu | Thr | Glu | Ile | Met | Pro | Val | Phe | Gln |
| | | | | 665 | | | | | 670 | | | | | 675 |
| Gly | Leu | Asn | Glu | Leu | Ile | Pro | Met | Tyr | Lys | Leu | Met | Glu | Lys | Arg |
| | | | | 680 | | | | | 685 | | | | | 690 |
| Asp | Met | Asn | Glu | Val | Glu | Thr | Gln | Phe | Lys | Ala | Phe | Leu | Ile | Arg |
| | | | | 695 | | | | | 700 | | | | | 705 |
| Leu | Leu | Arg | Asp | Leu | Ile | Asp | Lys | Gln | Thr | Trp | Thr | Asp | Glu | Gly |
| | | | | 710 | | | | | 715 | | | | | 720 |
| Ser | Val | Ser | Glu | Gln | Met | Leu | Arg | Ser | Glu | Leu | Leu | Leu | Leu | Ala |
| | | | | 725 | | | | | 730 | | | | | 735 |
| Cys | Val | His | Asn | Tyr | Gln | Pro | Cys | Val | Gln | Arg | Ala | Glu | Gly | Tyr |
| | | | | 740 | | | | | 745 | | | | | 750 |
| Phe | Arg | Lys | Trp | Lys | Glu | Ser | Asn | Gly | Asn | Leu | Ser | Leu | Pro | Val |
| | | | | 755 | | | | | 760 | | | | | 765 |
| Asp | Val | Thr | Leu | Ala | Val | Phe | Ala | Val | Gly | Ala | Gln | Ser | Thr | Glu |
| | | | | 770 | | | | | 775 | | | | | 780 |
| Gly | Trp | Asp | Phe | Leu | Tyr | Ser | Lys | Tyr | Gln | Phe | Ser | Leu | Ser | Ser |
| | | | | 785 | | | | | 790 | | | | | 795 |
| Thr | Glu | Lys | Ser | Gln | Ile | Glu | Phe | Ala | Leu | Cys | Arg | Thr | Gln | Asn |
| | | | | 800 | | | | | 805 | | | | | 810 |
| Lys | Glu | Lys | Leu | Gln | Trp | Leu | Leu | Asp | Glu | Ser | Phe | Lys | Gly | Asp |
| | | | | 815 | | | | | 820 | | | | | 825 |
| Lys | Ile | Lys | Thr | Gln | Glu | Phe | Pro | Gln | Ile | Leu | Thr | Leu | Ile | Gly |
| | | | | 830 | | | | | 835 | | | | | 840 |
| Arg | Asn | Pro | Val | Gly | Tyr | Pro | Leu | Ala | Trp | Gln | Phe | Leu | Arg | Lys |
| | | | | 845 | | | | | 850 | | | | | 855 |
| Asn | Trp | Asn | Lys | Leu | Val | Gln | Lys | Phe | Glu | Leu | Gly | Ser | Ser | Ser |
| | | | | 860 | | | | | 865 | | | | | 870 |
| Ile | Ala | His | Met | Val | Met | Gly | Thr | Thr | Asn | Gln | Phe | Ser | Thr | Arg |
| | | | | 875 | | | | | 880 | | | | | 885 |
| Thr | Arg | Leu | Glu | Glu | Val | Lys | Gly | Phe | Phe | Ser | Ser | Leu | Lys | Glu |
| | | | | 890 | | | | | 895 | | | | | 900 |
| Asn | Gly | Ser | Gln | Leu | Arg | Cys | Val | Gln | Gln | Thr | Ile | Glu | Thr | Ile |
| | | | | 905 | | | | | 910 | | | | | 915 |
| Glu | Glu | Asn | Ile | Gly | Trp | Met | Asp | Lys | Asn | Phe | Asp | Lys | Ile | Arg |

920

925

930

Val Trp Leu Gln Ser Glu Lys Leu Glu Arg Met
 935 940

<210> 354

<211> 1587

<212> DNA

<213> Homo sapiens

<400> 354

cagccacaga cgggtcatga ggcggtatt actgctggcc ctcttggggt 50
 tcatctccc actgccagga gtgcaggcgc tgctctgcca gtttgggaca 100
 gttcagcatg tgtggaaggt gtccgacctc ccccggaat ggaccctaa 150
 gaacaccagc tgcgacagcg gcttggggtg ccaggacacg ttgatgctca 200
 ttgagagcgg accccaagtg agcctgggtg tctccaaggg ctgcacggag 250
 gccaaaggacc aggagccccg cgtcactgag caccggatgg gccccggcct 300
 ctccctgatc tcttacacct tcgtgtgccc ccaggaggac ttctgcaaca 350
 acctcgtaa ctccctcccg ctttggggcc cacagcccc agcagacca 400
 ggatccttga ggtgcccagt ctgcttgtct atggaaggct gtctggaggg 450
 gacaacagaa gagatctgcc ccaaggggac cacacactgt tatgatggcc 500
 tctcaggct caggggagga ggcattctt ccaatctgag agtccaggga 550
 tgcattcccc agccagggtg caacctgctc aatgggacac aggaaattgg 600
 gcccgtgggt atgactgaga actgcaatag gaaagatttt ctgacctgtc 650
 atcggggggac caccattatg acacacggaa acttgggtca agaaccact 700
 gattggacca catgaatac cgagatgtgc gaggtggggc aggtgtgtca 750
 ggagacgctg ctgctcatag atgtaggact cacatcaacc ctggtgggga 800
 caaaaggctg cagcactggt ggggctcaa attcccagaa gaccaccatc 850
 cactcagccc ctcttggggt gcttgtggcc tctataccc acttctgtc 900
 ctgggacctg tgcaatagtg ccagcagcag cagcgttctg ctgaactccc 950
 tccctectca agctgcccct gtcccaggag accggcagtg tctacctgt 1000
 gtgcagcccc ttggaacctg ttcaagtggc tcccccgaa tgacctgcc 1050
 caggggcgcc actcattggt atgatgggta cattcatctc tcaggagggt 1100
 ggctgtccac caaatgagc attcagggtc gcgtggccca accttcagc 1150

ttcttggtga accacaccag acaaatcggg atcttctctg cgcgtgagaa 1200
 gcgtgatgtg cagcctcctg cctctcagca tgagggaggt ggggctgagg 1250
 gcctggagtc tctcacttgg ggggtggggc tggcactggc cccagcgctg 1300
 tgggtggggag tggtttgccc ttcctgctaa ctctattacc cccacgattc 1350
 ttcaccgctg ctgaccaccc aactcaacc tccctctgac ctcataacct 1400
 aatggccttg gacaccagat tctttcccat tctgtccatg aatcatcttc 1450
 cccacacaca atcattcata tctactcacc taacagcaac actggggaga 1500
 gcctggagca tccggacttg ccctatggga gaggggacgc tggaggagtg 1550
 gctgcatgta tctgataata cagaccctgt cctttca 1587

<210> 355
 <211> 437
 <212> PRT
 <213> Homo sapiens

<400> 355
 Met Ser Ala Val Leu Leu Leu Ala Leu Leu Gly Phe Ile Leu Pro
 1 5 10 15
 Leu Pro Gly Val Gln Ala Leu Leu Cys Gln Phe Gly Thr Val Gln
 20 25 30
 His Val Trp Lys Val Ser Asp Leu Pro Arg Gln Trp Thr Pro Lys
 35 40 45
 Asn Thr Ser Cys Asp Ser Gly Leu Gly Cys Gln Asp Thr Leu Met
 50 55 60
 Leu Ile Glu Ser Gly Pro Gln Val Ser Leu Val Leu Ser Lys Gly
 65 70 75
 Cys Thr Glu Ala Lys Asp Gln Glu Pro Arg Val Thr Glu His Arg
 80 85 90
 Met Gly Pro Gly Leu Ser Leu Ile Ser Tyr Thr Phe Val Cys Arg
 95 100 105
 Gln Glu Asp Phe Cys Asn Asn Leu Val Asn Ser Leu Pro Leu Trp
 110 115 120
 Ala Pro Gln Pro Pro Ala Asp Pro Gly Ser Leu Arg Cys Pro Val
 125 130 135
 Cys Leu Ser Met Glu Gly Cys Leu Glu Gly Thr Thr Glu Glu Ile
 140 145 150
 Cys Pro Lys Gly Thr Thr His Cys Tyr Asp Gly Leu Leu Arg Leu
 155 160 165

| | | |
|-----------------|---|-------------------------|
| Arg Gly Gly Gly | Ile Phe Ser Asn Leu | Arg Val Gln Gly Cys Met |
| 170 | 175 | 180 |
| Pro Gln Pro Gly | Cys Asn Leu Leu Asn Gly Thr Gln Glu Ile Gly | |
| 185 | 190 | 195 |
| Pro Val Gly Met | Thr Glu Asn Cys Asn Arg Lys Asp Phe Leu Thr | |
| 200 | 205 | 210 |
| Cys His Arg Gly | Thr Thr Ile Met Thr His Gly Asn Leu Ala Gln | |
| 215 | 220 | 225 |
| Glu Pro Thr Asp | Trp Thr Thr Ser Asn Thr Glu Met Cys Glu Val | |
| 230 | 235 | 240 |
| Gly Gln Val Cys | Gln Glu Thr Leu Leu Leu Ile Asp Val Gly Leu | |
| 245 | 250 | 255 |
| Thr Ser Thr Leu | Val Gly Thr Lys Gly Cys Ser Thr Val Gly Ala | |
| 260 | 265 | 270 |
| Gln Asn Ser Gln | Lys Thr Thr Ile His Ser Ala Pro Pro Gly Val | |
| 275 | 280 | 285 |
| Leu Val Ala Ser | Tyr Thr His Phe Cys Ser Ser Asp Leu Cys Asn | |
| 290 | 295 | 300 |
| Ser Ala Ser Ser | Ser Ser Val Leu Leu Asn Ser Leu Pro Pro Gln | |
| 305 | 310 | 315 |
| Ala Ala Pro Val | Pro Gly Asp Arg Gln Cys Pro Thr Cys Val Gln | |
| 320 | 325 | 330 |
| Pro Leu Gly Thr | Cys Ser Ser Gly Ser Pro Arg Met Thr Cys Pro | |
| 335 | 340 | 345 |
| Arg Gly Ala Thr | His Cys Tyr Asp Gly Tyr Ile His Leu Ser Gly | |
| 350 | 355 | 360 |
| Gly Gly Leu Ser | Thr Lys Met Ser Ile Gln Gly Cys Val Ala Gln | |
| 365 | 370 | 375 |
| Pro Ser Ser Phe | Leu Leu Asn His Thr Arg Gln Ile Gly Ile Phe | |
| 380 | 385 | 390 |
| Ser Ala Arg Glu | Lys Arg Asp Val Gln Pro Pro Ala Ser Gln His | |
| 395 | 400 | 405 |
| Glu Gly Gly Gly | Ala Glu Gly Leu Glu Ser Leu Thr Trp Gly Val | |
| 410 | 415 | 420 |
| Gly Leu Ala Leu | Ala Pro Ala Leu Trp Trp Gly Val Val Cys Pro | |
| 425 | 430 | 435 |
| Ser Cys | | |

<210> 356
<211> 1238
<212> DNA
<213> Homo sapiens

<400> 356
gcgacgggca ggacgccccg ttgccttagc gcgtgctcag gagttggtgt 50
cctgcctgcg ctcaggatga gggggaatct ggccctggtg ggcgttctaa 100
tcagcctggc cttcctgtca ctgctgccat ctggacatcc tcagccggct 150
ggcgatgacg cctgctctgt gcagatccctc gtccctggcc tcaaagggga 200
tgcgaggagag aaggagagaca aaggcgcccc cggacggcct ggaagagtcg 250
gccccacggg agaaaaagga gacatggggg acaaaggaca gaaaggcagt 300
gtgggtcgtc atgaaaaaat tgggtccatt ggctctaaag gtgagaaagg 350
agattccggt gacataggac cccctgggtcc taatggagaa ccaggcctcc 400
catgtgagtg cagccagctg cgcaaggcca tcggggagat ggacaaccag 450
gtctctcagc tgaccagcga gctcaagttc atcaagaatg ctgtcgccgg 500
tgtgcgcgag acggagagca agatctacct gctggtgaag gaggagaagc 550
gctacgcgga cggccagctg tcctgccagg gccgcggggg cacgctgagc 600
atgccaagg acgaggctgc caatggcctg atggccgcat acctggcgca 650
agccggcctg gcccgtgtct tcatcgccat caacgacctg gagaaggagg 700
gcgccttcgt gtactctgac cactcccca tgcgacctt caacaagtgg 750
cgcagcgggt agcccaacaa tgcctacgac gaggaggact gcgtggagat 800
gggtggcctcg ggcggtgga acgacgtggc ctgccacacc accatgtact 850
tcatgtgtga gtttgacaag gagaacatgt gagcctcagg ctggggctgc 900
ccattggggg ccccatatgt ccctgcaggg ttggcaggga cagagcccag 950
accatggtgc cagccaggga gctgtccctc tgtgaagggt ggaggctcac 1000
tgagtagagg gctgttgtct aaactgagaa aatggcctat gcttaagagg 1050
aaaatgaaag tgttcctggg gtgctgtctc tgaagaagca gagtttcatt 1100
acctgtattg tagcccaaat gtcattatgt aattattacc cagaattgct 1150
cttcataaaa gcttgtgcct ttgtccaagc tatacaataa aatctttaag 1200
tagtgcagta gttaagtcca aaaaaaaaaa aaaaaaaaaa 1238

<210> 357

<211> 271
<212> PRT
<213> Homo sapiens

<400> 357

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Arg | Gly | Asn | Leu | Ala | Leu | Val | Gly | Val | Leu | Ile | Ser | Leu | Ala | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Phe | Leu | Ser | Leu | Leu | Pro | Ser | Gly | His | Pro | Gln | Pro | Ala | Gly | Asp | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Asp | Ala | Cys | Ser | Val | Gln | Ile | Leu | Val | Pro | Gly | Leu | Lys | Gly | Asp | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Ala | Gly | Glu | Lys | Gly | Asp | Lys | Gly | Ala | Pro | Gly | Arg | Pro | Gly | Arg | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Val | Gly | Pro | Thr | Gly | Glu | Lys | Gly | Asp | Met | Gly | Asp | Lys | Gly | Gln | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Lys | Gly | Ser | Val | Gly | Arg | His | Gly | Lys | Ile | Gly | Pro | Ile | Gly | Ser | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Lys | Gly | Glu | Lys | Gly | Asp | Ser | Gly | Asp | Ile | Gly | Pro | Pro | Gly | Pro | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Asn | Gly | Glu | Pro | Gly | Leu | Pro | Cys | Glu | Cys | Ser | Gln | Leu | Arg | Lys | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Ala | Ile | Gly | Glu | Met | Asp | Asn | Gln | Val | Ser | Gln | Leu | Thr | Ser | Glu | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Leu | Lys | Phe | Ile | Lys | Asn | Ala | Val | Ala | Gly | Val | Arg | Glu | Thr | Glu | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Ser | Lys | Ile | Tyr | Leu | Leu | Val | Lys | Glu | Glu | Lys | Arg | Tyr | Ala | Asp | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Ala | Gln | Leu | Ser | Cys | Gln | Gly | Arg | Gly | Gly | Thr | Leu | Ser | Met | Pro | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Lys | Asp | Glu | Ala | Ala | Asn | Gly | Leu | Met | Ala | Ala | Tyr | Leu | Ala | Gln | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ala | Gly | Leu | Ala | Arg | Val | Phe | Ile | Gly | Ile | Asn | Asp | Leu | Glu | Lys | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Glu | Gly | Ala | Phe | Val | Tyr | Ser | Asp | His | Ser | Pro | Met | Arg | Thr | Phe | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Asn | Lys | Trp | Arg | Ser | Gly | Glu | Pro | Asn | Asn | Ala | Tyr | Asp | Glu | Glu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Asp | Cys | Val | Glu | Met | Val | Ala | Ser | Gly | Gly | Trp | Asn | Asp | Val | Ala | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Cys | His | Thr | Thr | Met | Tyr | Phe | Met | Cys | Glu | Phe | Asp | Lys | Glu | Asn | |

260

265

270

Met

<210> 358

<211> 972

<212> DNA

<213> Homo sapiens

<400> 358

agtgactgca gccttcctag atccccctcca ctcggtttct ctctttgcag 50
gagcaccggc agcaccagtg tgtgagggga gcaggcagcg gtcctagcca 100
gttccttgat cctgccagac cccccagccc ccggcacaga gctgctccac 150
aggcaccatg aggatcatgc tgctattcac agccatcctg gccttcagcc 200
tagctcagag ctttggggct gtctgtaagg agccacagga ggaggtgggt 250
cctggcgggg gccgcagcaa gagggatcca gatctctacc agctgctcca 300
gagactcttc aaaagccact catctctgga gggattgctc aaagccctga 350
gccaggctag cacagatcct aaggaatcaa catctcccga gaaacgtgac 400
atgcatgact tctttgtggg acttatgggc aagaggagcg tccagccaga 450
gggaaagaca ggacctttct taccttcagt gagggttcct cgcccccttc 500
atcccaatca gcttggatcc acaggaaagt cttccctggg aacagaggag 550
cagagacctt tataagactc tcctacggat gtgaatcaag agaacgtccc 600
cagctttggc atctcaagt atcccccgag agcagaatag gtactccact 650
tccggactcc tggactgcat taggaagacc tctttccctg tcccaatccc 700
caggtgcgca cgctcctgtt accctttctc ttccctgttc ttgtaacatt 750
cttgtgcttt gactccttct ccatcttttc tacctgacct tgggtgaggaa 800
actgcatagt gaatatcccc aaccccaatg ggcattgact gtagaatacc 850
ctagagttcc tgtagtgtcc tacattaaaa atataatgtc tctctctatt 900
cctcaacaat aaaggatttt tgcatatgaa aaaaaaaaaa aaaaaaaaaa 950
aaaaaaaaaa aaaaaaaaaa aa 972

<210> 359

<211> 135

<212> PRT

<213> Homo sapiens

<400> 359

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Ile | Met | Leu | Leu | Phe | Thr | Ala | Ile | Leu | Ala | Phe | Ser | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ala | Gln | Ser | Phe | Gly | Ala | Val | Cys | Lys | Glu | Pro | Gln | Glu | Glu | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Val | Pro | Gly | Gly | Gly | Arg | Ser | Lys | Arg | Asp | Pro | Asp | Leu | Tyr | Gln |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Leu | Leu | Gln | Arg | Leu | Phe | Lys | Ser | His | Ser | Ser | Leu | Glu | Gly | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Leu | Lys | Ala | Leu | Ser | Gln | Ala | Ser | Thr | Asp | Pro | Lys | Glu | Ser | Thr |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ser | Pro | Glu | Lys | Arg | Asp | Met | His | Asp | Phe | Phe | Val | Gly | Leu | Met |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Gly | Lys | Arg | Ser | Val | Gln | Pro | Glu | Gly | Lys | Thr | Gly | Pro | Phe | Leu |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Pro | Ser | Val | Arg | Val | Pro | Arg | Pro | Leu | His | Pro | Asn | Gln | Leu | Gly |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Ser | Thr | Gly | Lys | Ser | Ser | Leu | Gly | Thr | Glu | Glu | Gln | Arg | Pro | Leu |
| | | | | 125 | | | | | 130 | | | | | 135 |

<210> 360
 <211> 1738
 <212> DNA
 <213> Homo sapiens

<400> 360
 gggcgtctcc ggctgctcct attgagctgt ctgctcgctg tgcccgtgt 50
 gcctgctgtg cccgcgtgt cgccgctgct accgcgtctg ctggacgcgg 100
 gagacgccag cgagctggtg attggagccc tgcggagagc tcaagcgccc 150
 agctctgccc caggagccca ggctgccccg tgagtcccat agttgctgca 200
 ggagtggagc catgagctgc gtcctgggtg gtgtcatccc cttggggctg 250
 ctgttcctgg tctgcggatc ccaaggctac ctctgcccac acgtcactct 300
 cttagaggag ctgctcagca aataccagca caacgagtct cactcccggg 350
 tccgcagagc catccccagg gaggacaagg aggagatcct catgctgcac 400
 aacaagcttc ggggccaggt gcagcctcag gcctccaaca tggagtacat 450
 ggtgagcgcc ggctccggcc gcagaggctg gcaccggggg tggggcctgg 500
 gccaccagcc tgctctgttc ccagccagc tctgttcccc agccagtgcg 550
 tgtgatggct ggctcagggg ctctctggc aggggaggat cccggctctg 600

```

ttctgttttg tttgtttggt ttgagacagg gtctcactct gccactgacg 650
ctggagtgca atggcacaat cgtcatgccc tgaaacctta gactcccggg 700
gttaagcgat cctgcttcag cctcccaagt agctggaact acaggcatgc 750
accatgggtgc ccagctagat tttaaatatt ttgtggagat ggggggtcttg 800
ctacgttgcc caggctgggc ttgaactcct aggctcaagc aatcctcctg 850
cctcagcctc tcaaagtgtc aggattatag gcatgagtca ccctgtctgg 900
ctctggctct gttcttaaca ttctgccaaa acaacacacg tgggttcctt 950
gtgcagagcc tgctctggtg ccttcatgtc actcttggtg gctccactgg 1000
gaacacagct ctcagccttt cccacctgga ggcagagtgg ggagggggccc 1050
agggctgggc tttgctgatg ctgatctcag ctgtgccaca cgctagctgc 1100
accaccctga cttctcctta gcccggtgta gcctcacttt ccacttggag 1150
agtccttcct cgcgtgggtg ccatgactgt gagataagtc gaggctgtga 1200
agggccgggc acagactgac ctgcctcccc aaccctagg ctttgctaac 1250
cgggaaagga gctaacggtg acagaagaca gccaaggtca accctcccgg 1300
gtgattgtga tgggtgttcc aggtgtggtt gggcgatgct gctacttgac 1350
cccaagctcc agtgtggaaa cttccttcct ggctgggttt ccagaactac 1400
agaggaatgg accacagtct tccagggtcc ctctcgtcc accaaccggg 1450
agcctccacc ttggccatcc gtcagctatg aatggctttt taaacaaacc 1500
cacgtcccag cctgggtaac atggtaaagc cccgtctcta caaaaaaatc 1550
caagttagcc gggcatgggt gtgcgcacct gtagtcccag ctgcagtggg 1600
actgaggtgg aggtggaggt ggggggtggg agctgaggaa ggaggatcgc 1650
ttgagcctgg gaagtcgagg ctgcagtgag ctgagattgc accactgcac 1700
tccagcctgg gtgacagagc aagaccctgt ctcaaaaa 1738

```

<210> 361

<211> 159

<212> PRT

<213> Homo sapiens

<400> 361

```

Met Ser Cys Val Leu Gly Gly Val Ile Pro Leu Gly Leu Leu Phe
  1             5             10             15

```

```

Leu Val Cys Gly Ser Gln Gly Tyr Leu Leu Pro Asn Val Thr Leu
      20             25             30

```

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Glu | Glu | Leu | Leu | Ser | Lys | Tyr | Gln | His | Asn | Glu | Ser | His | Ser | 35 | 40 | 45 |
| Arg | Val | Arg | Arg | Ala | Ile | Pro | Arg | Glu | Asp | Lys | Glu | Glu | Ile | Leu | 50 | 55 | 60 |
| Met | Leu | His | Asn | Lys | Leu | Arg | Gly | Gln | Val | Gln | Pro | Gln | Ala | Ser | 65 | 70 | 75 |
| Asn | Met | Glu | Tyr | Met | Val | Ser | Ala | Gly | Ser | Gly | Arg | Arg | Gly | Trp | 80 | 85 | 90 |
| His | Arg | Gly | Trp | Gly | Leu | Gly | His | Gln | Pro | Ala | Leu | Phe | Pro | Ser | 95 | 100 | 105 |
| Gln | Leu | Cys | Ser | Pro | Ala | Ser | Ala | Cys | Asp | Gly | Trp | Leu | Arg | Val | 110 | 115 | 120 |
| Ser | Ser | Gly | Arg | Gly | Gly | Ser | Arg | Leu | Cys | Ser | Val | Leu | Phe | Val | 125 | 130 | 135 |
| Cys | Phe | Glu | Thr | Gly | Ser | His | Ser | Ala | Thr | Asp | Ala | Gly | Val | Gln | 140 | 145 | 150 |
| Trp | His | Asn | Arg | His | Ala | Leu | Lys | Pro | | | | | | | 155 | | |

<210> 362
 <211> 422
 <212> DNA
 <213> Homo sapiens

<400> 362
 aaggagaggc caccgggact tcagtgtctc ctccatccca ggagcgcagt 50
 ggccactatg gggctctgggc tgccccttgt cctcctcttg accctccttg 100
 gcagctcaca tggaacaggg ccgggtatga ctttgcaact gaagctgaag 150
 gagtcttttc tgacaaattc ctctatgag tccagcttcc tggaattgct 200
 tgaaaagctc tgcctcctcc tccatctccc ttcagggacc agcgtcaccc 250
 tccaccatgc aagatctcaa caccatgttg tctgcaacac atgacagcca 300
 ttgaagcctg tgctcttctt ggcccgggct tttgggcccgg ggatgcagga 350
 ggcaggcccc gacctgtct ttcagcaggc cccaccctc ctgagtggca 400
 ataaataaaa ttcggtatgc tg 422

<210> 363
 <211> 78
 <212> PRT
 <213> Homo sapiens

<400> 363

Met Gly Ser Gly Leu Pro Leu Val Leu Leu Leu Thr Leu Leu Gly
1 5 10 15

Ser Ser His Gly Thr Gly Pro Gly Met Thr Leu Gln Leu Lys Leu
20 25 30

Lys Glu Ser Phe Leu Thr Asn Ser Ser Tyr Glu Ser Ser Phe Leu
35 40 45

Glu Leu Leu Glu Lys Leu Cys Leu Leu Leu His Leu Pro Ser Gly
50 55 60

Thr Ser Val Thr Leu His His Ala Arg Ser Gln His His Val Val
65 70 75

Cys Asn Thr

<210> 364

<211> 826

<212> DNA

<213> Homo sapiens

<400> 364

aattgtatct gtgtaatggt aaaacaaacg aaataaaata gaaggaaaaa 50
ctttctgagt ttcaaaaaca acagactagt actctaaaga actctttaaa 100
acaattaact gttaggattg cagttatgat tggatattat ttaattctgt 150
ttctgatgtg gggttcctcc actgtgttct gtgtgctatt aatatttacc 200
attgcagaag cttcattcag tgttgaaaat gaatgcttag tggatctgtg 250
cctcttacgc atatgttaca aattatctgg agttcctaata caatgcagag 300
ttccccctccc ctccgattgt tctaaataat tgaaagatgt ctgctgtgga 350
aaaaggcatg tatttaaatac tgtatgattc tcaaccatct ttagttggga 400
aaggtccttg aaagccaatg gaaatacttt ttttttttct tggcactaat 450
caagtgagtg ttaccttttc acttagtagg atgtgttggt acgctagtaa 500
aatagaaacc tgtgtttatt ctcagggtatt ttagaaacaa cagccatcat 550
tttattttat gtgtgtgttc ttggctgtat tcataaatta tatatttttg 600
gctatcaaat attacttcat tcaatataaa taacaatagt agaagttggt 650
tacttagata tgctttctag ttgcattttc tcagcctatg taagactact 700
ttgttgtaat agcctttgaa atttacagta ctgtctctct actatcttca 750
gattacttga ttcaaataaa ccaattatgt ttgtaattga tattaataaa 800

accagaataa aagttcatat ctaccc 826

<210> 365

<211> 67

<212> PRT

<213> Homo sapiens

<400> 365

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ile | Gly | Tyr | Tyr | Leu | Ile | Leu | Phe | Leu | Met | Trp | Gly | Ser | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Val | Phe | Cys | Val | Leu | Leu | Ile | Phe | Thr | Ile | Ala | Glu | Ala | Ser |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Ser | Val | Glu | Asn | Glu | Cys | Leu | Val | Asp | Leu | Cys | Leu | Leu | Arg |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Cys | Tyr | Lys | Leu | Ser | Gly | Val | Pro | Asn | Gln | Cys | Arg | Val | Pro |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|
| Leu | Pro | Ser | Asp | Cys | Ser | Lys |
| | | | | 65 | | |

<210> 366

<211> 2475

<212> DNA

<213> Homo sapiens

<400> 366

gaggatttgc cacagcagcg gatagagcag gagagcacca ccggagccct 50

tgagacatcc ttgagaagag ccacagcata agagactgcc ctgcttggtg 100

ttttgcagga tgatggtggc ccttcgagga gcttctgcat tgctggttct 150

gttccttgca gcttttctgc ccccgccgca gtgtaccag gaccagcca 200

tggtgcatta catctaccag cgctttcgag tcttgagca agggctggaa 250

aatgtaccc aagcaacgag ggcatacatt caagaattcc aagagttctc 300

aaaaaatata tctgtcatgc tgggaagatg tcagacctac acaagtgagt 350

acaagagtgc agtgggtaac ttggcactga gagttgaacg tgcccaacgg 400

gagattgact acatacaata ccttcgagag gctgacgagt gcatcgtatc 450

agaggacaag aactggcag aatggttgct ccaagaagct gaagaagaga 500

aaaagatccg gactctgctg aatgcaagct gtgacaacat gctgatgggc 550

ataaagtctt tgaaaatagt gaagaagatg atggacacac atggctcttg 600

gatgaaagat gctgtctata actctccaaa ggtgtactta ttaattggat 650

ccagaaacaa cactgtttgg gaatttgcaa acatacgggc attcatggag 700

gataacacca agccagctcc ccggaagcaa atcctaacac tttcctggca 750
gggaacaggc caagtgatct acaaaggttt tctatTTTTT cataaccaag 800
caacttctaa tgagataatc aaatataacc tgcagaagag gactgtggaa 850
gatcgaatgc tgctcccagg aggggtaggc cgagcattgg tttaccagca 900
ctccccctca acttacattg acctggctgt ggatgagcat gggctctggg 950
ccatccactc tgggccaggc acccatagcc atttggttct cacaaagatt 1000
gagccgggca cactgggagt ggagcattca tgggataccc catgcagaag 1050
ccaggatgct gaagcctcat tcctcttgtg tggggttctc tatgtggtct 1100
acagtactgg gggccagggc cctcatcgca tcacctgcat ctatgatcca 1150
ctgggcacta tcagtgagga ggacttgccc aacttgttct tccccaagag 1200
accaagaagt cactccatga tccattacaa cccagagat aagcagctct 1250
atgcctggaa tgaaggaaac cagatcattt acaaactcca gacaaagaga 1300
aagctgcctc tgaagtaatg cattacagct gtgagaaaga gcactgtggc 1350
tttggcagct gttctacagg acagtgaggc tatagcccct tcacaatata 1400
gtatccctct aatcacacac aggaagagtg tgtagaagtg gaaatacgta 1450
tgctctcttt cccaaatgtc actgccttag gtatcttcca agagcttaga 1500
tgagagcata tcatcaggaa agtttcaaca atgtccatta ctcccccaa 1550
cctcctggct ctcaaggatg accacattct gatacagcct acttcaagcc 1600
ttttgtttta ctgctcccca gcatttactg taactctgcc atcttccctc 1650
ccacaattag agttgtatgc cageccctaa tattcaccac tggcttttct 1700
ctccccctgg ctttgctgaa gctcttccct ctttttcaa tgtctattga 1750
tattctccca ttttactg ccaactaaaa tactattaat atttcttct 1800
tttcttttct tttttttgag acaaggctc actatgttgc ccaggctggt 1850
ctcaaactcc agagctcaag agatcctcct gcctcagcct cctaagtacc 1900
tgggattaca ggcattgtgc accacacctg gcttaaaata ctatttctta 1950
ttgaggttta acctctattt cccctagccc tgctcttcca ctaagcttgg 2000
tagatgtaat aataaagtga aaatattaac atttgaatat cgctttccag 2050
gtgtggagtg tttgcacatc attgaattct cgtttcacct ttgtgaaaca 2100
tgcacaagtc tttacagctg tcattctaga gtttaggtga gtaacacaat 2150

tacaaagtga aagatacagc tagaaaatac tacaaatccc atagtttttc 2200
cattgcccac ggaagcatca aatacgtatg tttgttcacc tactcttata 2250
gtcaatgcgt tcatcgtttc agcctaataa taatagtctg tcccttttagc 2300
cagttttcat gtctgcacaa gacctttcaa taggcctttc aaatgataat 2350
tcctccagaa aaccagtcta agggtgagga cccaactct agcctcctct 2400
tgtcttgctg tcctctgttt ctctctttct gctttaaatt caataaaagt 2450
gacactgagc aaaaaaaaaa aaaaa 2475

<210> 367

<211> 402

<212> PRT

<213> Homo sapiens

<400> 367

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Met | Val | Ala | Leu | Arg | Gly | Ala | Ser | Ala | Leu | Leu | Val | Leu | Phe | 1 | 5 | 10 | 15 |
| Leu | Ala | Ala | Phe | Leu | Pro | Pro | Pro | Gln | Cys | Thr | Gln | Asp | Pro | Ala | 20 | 25 | 30 | |
| Met | Val | His | Tyr | Ile | Tyr | Gln | Arg | Phe | Arg | Val | Leu | Glu | Gln | Gly | 35 | 40 | 45 | |
| Leu | Glu | Lys | Cys | Thr | Gln | Ala | Thr | Arg | Ala | Tyr | Ile | Gln | Glu | Phe | 50 | 55 | 60 | |
| Gln | Glu | Phe | Ser | Lys | Asn | Ile | Ser | Val | Met | Leu | Gly | Arg | Cys | Gln | 65 | 70 | 75 | |
| Thr | Tyr | Thr | Ser | Glu | Tyr | Lys | Ser | Ala | Val | Gly | Asn | Leu | Ala | Leu | 80 | 85 | 90 | |
| Arg | Val | Glu | Arg | Ala | Gln | Arg | Glu | Ile | Asp | Tyr | Ile | Gln | Tyr | Leu | 95 | 100 | 105 | |
| Arg | Glu | Ala | Asp | Glu | Cys | Ile | Val | Ser | Glu | Asp | Lys | Thr | Leu | Ala | 110 | 115 | 120 | |
| Glu | Met | Leu | Leu | Gln | Glu | Ala | Glu | Glu | Glu | Lys | Lys | Ile | Arg | Thr | 125 | 130 | 135 | |
| Leu | Leu | Asn | Ala | Ser | Cys | Asp | Asn | Met | Leu | Met | Gly | Ile | Lys | Ser | 140 | 145 | 150 | |
| Leu | Lys | Ile | Val | Lys | Lys | Met | Met | Asp | Thr | His | Gly | Ser | Trp | Met | 155 | 160 | 165 | |
| Lys | Asp | Ala | Val | Tyr | Asn | Ser | Pro | Lys | Val | Tyr | Leu | Leu | Ile | Gly | 170 | 175 | 180 | |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Ser | Arg | Asn | Asn | Thr | Val | Trp | Glu | Phe | Ala | Asn | Ile | Arg | Ala | Phe | | 185 | 190 | 195 |
| Met | Glu | Asp | Asn | Thr | Lys | Pro | Ala | Pro | Arg | Lys | Gln | Ile | Leu | Thr | | 200 | 205 | 210 |
| Leu | Ser | Trp | Gln | Gly | Thr | Gly | Gln | Val | Ile | Tyr | Lys | Gly | Phe | Leu | | 215 | 220 | 225 |
| Phe | Phe | His | Asn | Gln | Ala | Thr | Ser | Asn | Glu | Ile | Ile | Lys | Tyr | Asn | | 230 | 235 | 240 |
| Leu | Gln | Lys | Arg | Thr | Val | Glu | Asp | Arg | Met | Leu | Leu | Pro | Gly | Gly | | 245 | 250 | 255 |
| Val | Gly | Arg | Ala | Leu | Val | Tyr | Gln | His | Ser | Pro | Ser | Thr | Tyr | Ile | | 260 | 265 | 270 |
| Asp | Leu | Ala | Val | Asp | Glu | His | Gly | Leu | Trp | Ala | Ile | His | Ser | Gly | | 275 | 280 | 285 |
| Pro | Gly | Thr | His | Ser | His | Leu | Val | Leu | Thr | Lys | Ile | Glu | Pro | Gly | | 290 | 295 | 300 |
| Thr | Leu | Gly | Val | Glu | His | Ser | Trp | Asp | Thr | Pro | Cys | Arg | Ser | Gln | | 305 | 310 | 315 |
| Asp | Ala | Glu | Ala | Ser | Phe | Leu | Leu | Cys | Gly | Val | Leu | Tyr | Val | Val | | 320 | 325 | 330 |
| Tyr | Ser | Thr | Gly | Gly | Gln | Gly | Pro | His | Arg | Ile | Thr | Cys | Ile | Tyr | | 335 | 340 | 345 |
| Asp | Pro | Leu | Gly | Thr | Ile | Ser | Glu | Glu | Asp | Leu | Pro | Asn | Leu | Phe | | 350 | 355 | 360 |
| Phe | Pro | Lys | Arg | Pro | Arg | Ser | His | Ser | Met | Ile | His | Tyr | Asn | Pro | | 365 | 370 | 375 |
| Arg | Asp | Lys | Gln | Leu | Tyr | Ala | Trp | Asn | Glu | Gly | Asn | Gln | Ile | Ile | | 380 | 385 | 390 |
| Tyr | Lys | Leu | Gln | Thr | Lys | Arg | Lys | Leu | Pro | Leu | Lys | | | | | 395 | 400 | |

<210> 368

<211> 2281

<212> DNA

<213> Homo sapiens

<400> 368

gggcgcgccgc gtactcacta gctgaggtgg cagtgggtcc accaacaatgg 50

agctctcgca gatgtcggag ctcatggggc tgtcggtgtt gcttgggctg 100

ctggccctga tggcgacggc ggcggtagcg cgggggtggc tgcgcgcggg 150

ggaggagagg agcggccggc ccgcctgcc aaaaagcaaat ggatttccac 200
ctgacaaaatc ttccgggatcc aagaagcaga aacaatatca gcggattcgg 250
aaggagaagc ctcaacaaca caacttcacc caccgcctcc tggctgcagc 300
tctgaagagc cacagcggga acatatcttg catggacttt agcagcaatg 350
gcaaatacct ggctacctgt gcagatgatc gcaccatccg catctggagc 400
accaaggact tcctgcagcg agagcaccgc agcatgagag ccaacgtgga 450
gctggaccac gccaccctgg tgcgcttcag ccctgactgc agagccttca 500
tcgtctggct ggccaacggg gacaccctcc gtgtcttcaa gatgaccaag 550
cgggaggatg ggggctacac cttcacagcc accccagagg acttccctaa 600
aaagcacaag gcgcctgtca tcgacattgg cattgctaac acagggaagt 650
ttatcatgac tgccctccagt gacaccactg tcctcatctg gagcctgaag 700
ggtcaagtgc tgtctaccat caacaccaac cagatgaaca acacacagc 750
tgctgtatct ccctgtggca gatttgtagc ctctgtgtggc ttcaccccag 800
atgtgaaggt ttgggaagtc tgcttttgaa agaaggggga gttccaggag 850
gtggtgcgag ccttogaact aaagggccac tccgcggctg tgcactcggt 900
tgctttctcc aacgactcac ggaggatggc ttctgtctcc aaggatggta 950
catggaaaact gtgggacaca gatgtggaat acaagaagaa gcaggacccc 1000
tacttgctga agacaggccg ctttgaagag gcggcgggtg ccgcgccgtg 1050
ccgcctggcc ctctccccc aacgcccaggc cttggccttg gccagtggca 1100
gtagtattca tctctacaat acccggcggg gcgagaagga ggagtgcctt 1150
gagcgggtcc atggcgagtg tatcgccaac ttgtcctttg acatcactgg 1200
ccgctttctg gcctcctgtg gggaccgggc ggtgcggctg tttcacaaca 1250
ctcctggcca ccgagccatg gtggaggaga tgcagggcca cctgaagcgg 1300
gcctccaacg agagcaccgc ccagaggctg cagcagcagc tgaccagggc 1350
ccaagagacc ctgaagagcc tgggtgcct gaagaagtga ctctgggagg 1400
gcccggcgca gaggattgag gaggagggat ctggcctcct catggcactg 1450
ctgccatctt tcctcccagg tggaagcctt tcagaaggag tctcctgggt 1500
ttcttactgg tggcctgct tcttcccatt gaaactactc ttgtctactt 1550
aggtctctct cttcttgctg gctgtgactc ctccctgact agtggccaag 1600

gtgcttttct tcctcccagg cccagtgggt ggaatctgtc cccacctggc 1650
 actgaggaga atggtagaga ggagaggaga gagagagaga atgtgatttt 1700
 tggccttgtg gcagcacatc ctcacacca aagaagtttg taaatgttcc 1750
 agaacaacct agagaacacc tgagtactaa gcagcagttt tgcaaggatg 1800
 ggagactggg atagcttccc atcacagaac tgtgttccat caaaaagaca 1850
 ctaagggatt tccttctggg cctcagttct atttgtaaga tggagaataa 1900
 tcctctctgt gaactccttg caaagatgat atgaggctaa gagaatatca 1950
 agtccccagg tctggaagaa aagtagaaaa gagtagtact attgtccaat 2000
 gtcatagaaag tggtaaaagt gggaaccagt gtgctttgaa accaaattag 2050
 aaacacattc cttgggaagg caaagttttc tgggacttga tcatacattt 2100
 tatatggttg ggacttctct cttcgggaga tgatatcttg tttaaggaga 2150
 cctcttttca gttcatcaag ttcatcagat atttgagtgc ccactctgtg 2200
 cccaaataaa tatgagctgg ggattaaaaa aaaaaaaaaa aaaaaaaaaa 2250
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa a 2281

<210> 369

<211> 447

<212> PRT

<213> Homo sapiens

<400> 369

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Leu | Ser | Gln | Met | Ser | Glu | Leu | Met | Gly | Leu | Ser | Val | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Gly | Leu | Leu | Ala | Leu | Met | Ala | Thr | Ala | Ala | Val | Ala | Arg | Gly |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Trp | Leu | Arg | Ala | Gly | Glu | Glu | Arg | Ser | Gly | Arg | Pro | Ala | Cys | Gln |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Lys | Ala | Asn | Gly | Phe | Pro | Pro | Asp | Lys | Ser | Ser | Gly | Ser | Lys | Lys |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Gln | Lys | Gln | Tyr | Gln | Arg | Ile | Arg | Lys | Glu | Lys | Pro | Gln | Gln | His |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Asn | Phe | Thr | His | Arg | Leu | Leu | Ala | Ala | Ala | Leu | Lys | Ser | His | Ser |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Gly | Asn | Ile | Ser | Cys | Met | Asp | Phe | Ser | Ser | Asn | Gly | Lys | Tyr | Leu |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ala | Thr | Cys | Ala | Asp | Asp | Arg | Thr | Ile | Arg | Ile | Trp | Ser | Thr | Lys |

| | | |
|---|-----|-----|
| 110 | 115 | 120 |
| Asp Phe Leu Gln Arg Glu His Arg Ser Met Arg Ala Asn Val Glu | | |
| 125 | 130 | 135 |
| Leu Asp His Ala Thr Leu Val Arg Phe Ser Pro Asp Cys Arg Ala | | |
| 140 | 145 | 150 |
| Phe Ile Val Trp Leu Ala Asn Gly Asp Thr Leu Arg Val Phe Lys | | |
| 155 | 160 | 165 |
| Met Thr Lys Arg Glu Asp Gly Gly Tyr Thr Phe Thr Ala Thr Pro | | |
| 170 | 175 | 180 |
| Glu Asp Phe Pro Lys Lys His Lys Ala Pro Val Ile Asp Ile Gly | | |
| 185 | 190 | 195 |
| Ile Ala Asn Thr Gly Lys Phe Ile Met Thr Ala Ser Ser Asp Thr | | |
| 200 | 205 | 210 |
| Thr Val Leu Ile Trp Ser Leu Lys Gly Gln Val Leu Ser Thr Ile | | |
| 215 | 220 | 225 |
| Asn Thr Asn Gln Met Asn Asn Thr His Ala Ala Val Ser Pro Cys | | |
| 230 | 235 | 240 |
| Gly Arg Phe Val Ala Ser Cys Gly Phe Thr Pro Asp Val Lys Val | | |
| 245 | 250 | 255 |
| Trp Glu Val Cys Phe Gly Lys Lys Gly Glu Phe Gln Glu Val Val | | |
| 260 | 265 | 270 |
| Arg Ala Phe Glu Leu Lys Gly His Ser Ala Ala Val His Ser Phe | | |
| 275 | 280 | 285 |
| Ala Phe Ser Asn Asp Ser Arg Arg Met Ala Ser Val Ser Lys Asp | | |
| 290 | 295 | 300 |
| Gly Thr Trp Lys Leu Trp Asp Thr Asp Val Glu Tyr Lys Lys Lys | | |
| 305 | 310 | 315 |
| Gln Asp Pro Tyr Leu Leu Lys Thr Gly Arg Phe Glu Glu Ala Ala | | |
| 320 | 325 | 330 |
| Gly Ala Ala Pro Cys Arg Leu Ala Leu Ser Pro Asn Ala Gln Val | | |
| 335 | 340 | 345 |
| Leu Ala Leu Ala Ser Gly Ser Ser Ile His Leu Tyr Asn Thr Arg | | |
| 350 | 355 | 360 |
| Arg Gly Glu Lys Glu Glu Cys Phe Glu Arg Val His Gly Glu Cys | | |
| 365 | 370 | 375 |
| Ile Ala Asn Leu Ser Phe Asp Ile Thr Gly Arg Phe Leu Ala Ser | | |
| 380 | 385 | 390 |
| Cys Gly Asp Arg Ala Val Arg Leu Phe His Asn Thr Pro Gly His | | |

| | | | | | |
|-----------------|---|--|-----|--|-----|
| | 395 | | 400 | | 405 |
| Arg Ala Met Val | Glu Glu Met Gln Gly His Leu Lys Arg Ala Ser | | | | |
| | 410 | | 415 | | 420 |
| Asn Glu Ser Thr | Arg Gln Arg Leu Gln Gln Gln Leu Thr Gln Ala | | | | |
| | 425 | | 430 | | 435 |
| Gln Glu Thr Leu | Lys Ser Leu Gly Ala Leu Lys Lys | | | | |
| | 440 | | 445 | | |

<210> 370
 <211> 1415
 <212> DNA
 <213> Homo sapiens

<400> 370
 tggcctcccc agcttgccag gcacaaggct gagcgggagg aagcgagagg 50
 catctaagca ggcagtgttt tgccttcacc ccaagtgacc atgagaggtg 100
 ccacgcgagt ctcaatcatg ctcctcctag taactgtgtc tgactgtgct 150
 gtgatcacag gggcctgtga gcgggatgtc cagtgtgggg caggcacctg 200
 ctgtgccatc agcctgtggc ttcgagggct gcgggatgtc accccgctgg 250
 ggcgggaagg cgaggagtgc caccgccgca gccacaaggc ccccttcttc 300
 aggaaacgca agcaccacac ctgtccttgc ttgccaacc tgctgtgtc 350
 caggttcccc gagggcaggc accgctgtc catggacttg aagaacatca 400
 attttttaggc gcttgccctgg tctcaggata cccaccatcc ttttcctgag 450
 cacagcctgg atttttatatt ctgccatgaa acccagctcc catgactctc 500
 ccagtcccta cactgactac cctgatctct cttgtctagt acgcacatat 550
 gcacacaggc agacatacct cccatcatga catggtcccc aggctggcct 600
 gaggatgtca cagcttgagg ctgtggtgtg aaagggtggc agcctgggtc 650
 tcttcctctc tcaggctgcc agagaggtgg taaatggcag aaaggacatt 700
 cccctcccc tccccagggt acctgctctc tttcctgggc cctgcccctc 750
 tccccacatg tatccctcgg tctgaattag acattcctgg gcacaggctc 800
 ttgggtgcat tgctcagagt ccaggtcct ggcctgacct tcaggccctt 850
 cacgtgaggt ctgtgaggac caatttgtgg gtagttcatc ttccctcgat 900
 tgggttaactc ctagttttca gaccacagac tcaagattgg ctcttcccag 950
 agggcagcag acagtcaccc caaggcaggc gtagggagcc cagggaggcc 1000

aatcagcccc ctgaagactc tgggtcccagt cagcctgtgg cttgtggcct 1050
 gtgacctgtg accttctgcc agaattgtca tgcctctgag gccccctctt 1100
 accacacttt accagttaac cactgaagcc cccaattccc acagcttttc 1150
 cattaaaatg caaatggtgg tggttcaatc taatctgata ttgacatatt 1200
 agaaggcaat taggggtgtt ccttaaaca ctcctttcca aggatcagcc 1250
 ctgagagcag gttgggtgact ttgaggaggg cagtcctctg tccagattgg 1300
 ggtgggagca agggacaggg agcagggcag gggctgaaag gggcactgat 1350
 tcagaccagg gaggcaacta cacaccaaca tgctggcttt agaataaaag 1400
 caccaactga aaaa 1415

<210> 371
 <211> 105
 <212> PRT
 <213> Homo sapiens

<400> 371
 Met Arg Gly Ala Thr Arg Val Ser Ile Met Leu Leu Leu Val Thr
 1 5 10 15
 Val Ser Asp Cys Ala Val Ile Thr Gly Ala Cys Glu Arg Asp Val
 20 25 30
 Gln Cys Gly Ala Gly Thr Cys Cys Ala Ile Ser Leu Trp Leu Arg
 35 40 45
 Gly Leu Arg Met Cys Thr Pro Leu Gly Arg Glu Gly Glu Glu Cys
 50 55 60
 His Pro Gly Ser His Lys Val Pro Phe Phe Arg Lys Arg Lys His
 65 70 75
 His Thr Cys Pro Cys Leu Pro Asn Leu Leu Cys Ser Arg Phe Pro
 80 85 90
 Asp Gly Arg Tyr Arg Cys Ser Met Asp Leu Lys Asn Ile Asn Phe
 95 100 105

<210> 372
 <211> 1281
 <212> DNA
 <213> Homo sapiens

<400> 372
 agcgcccggg cgtcggggcg gtaaaaggcc ggcagaaggg aggcacttga 50
 gaaatgtctt tcctccagga cccaagtttc ttcacccatgg ggatgtgggc 100
 cattggtgca ggagccctgg gggctgctgc cttggcattg ctgcttgcca 150

acacagacgt gtttctgtcc aagccccaga aagcggccct ggagtacctg 200
 gaggatatag acctgaaaac actggagaag gaaccaagga ctttcaaagc 250
 aaaggagcta tgggaaaaaa atggagctgt gattatggcc gtgcggaggc 300
 caggctgttt cctctgtcga gaggaagctg cggatctgtc ctccctgaaa 350
 agcatgttgg accagctggg cgtccccctc tatgcagtgg taaaggagca 400
 catcaggact gaagtgaagg atttccagcc ttatttcaaa ggagaaatct 450
 tcctggatga aaagaaaaag ttctatggtc cacaaggcg gaagatgatg 500
 tttatgggat ttatccgtct gggagtgtgg tacaacttct tccgagcctg 550
 gaacggaggc ttctctggaa acctggaagg agaaggcttc atccttgggg 600
 gagttttcgt ggtgggatca ggaaagcagg gcattcttct tgagcaccga 650
 gaaaaagaat ttggagacaa agtaaaccta ctttctgttc tggaagctgc 700
 taagatgata aaaccacaga ctttggcctc agagaaaaaa tgattgtgtg 750
 aaactgcccc gctcagggat aaccaggac attcacctgt gttcatggga 800
 tgtattgttt ccactcgtgt ccctaaggag tgagaaacct atttatactc 850
 tactctcagt atggattatt aatgtatttt aatattctgt ttaggcccac 900
 taaggcaaaa tagcccaaaa acaagactga caaaaatctg aaaaactaat 950
 gaggattatt aagctaaaac ctgggaaata ggaggcttaa aattgactgc 1000
 caggctgggt gcagtggctc acacctgtaa tcccagcact ttgggaggcc 1050
 aaggtgagca agtcacttga ggtcgggagt tcgagaccag cctgagcaac 1100
 atggcgaaac cccgtctcta ctaaaaatac aaaaatcacc cgggtgtggt 1150
 ggcaggcacc tgtagtccca gctacccggg aggctgaggc aggagaatca 1200
 cttgaacctg ggaggtggag gttgcggtga gctgagatca caccactgta 1250
 ttccagcctg ggtgactgag actctaacta a 1281

<210> 373

<211> 229

<212> PRT

<213> Homo sapiens

<400> 373

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Phe | Leu | Gln | Asp | Pro | Ser | Phe | Phe | Thr | Met | Gly | Met | Trp |
| 1 | | | | 5 | | | | | | 10 | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Ile | Gly | Ala | Gly | Ala | Leu | Gly | Ala | Ala | Ala | Leu | Ala | Leu | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | | | | |
|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ala | Asn | Thr | Asp | Val | Phe | Leu | Ser | Lys | Pro | Gln | Lys | Ala | Ala | 35 | 40 | 45 |
| Leu | Glu | Tyr | Leu | Glu | Asp | Ile | Asp | Leu | Lys | Thr | Leu | Glu | Lys | Glu | 50 | 55 | 60 |
| Pro | Arg | Thr | Phe | Lys | Ala | Lys | Glu | Leu | Trp | Glu | Lys | Asn | Gly | Ala | 65 | 70 | 75 |
| Val | Ile | Met | Ala | Val | Arg | Arg | Pro | Gly | Cys | Phe | Leu | Cys | Arg | Glu | 80 | 85 | 90 |
| Glu | Ala | Ala | Asp | Leu | Ser | Ser | Leu | Lys | Ser | Met | Leu | Asp | Gln | Leu | 95 | 100 | 105 |
| Gly | Val | Pro | Leu | Tyr | Ala | Val | Val | Lys | Glu | His | Ile | Arg | Thr | Glu | 110 | 115 | 120 |
| Val | Lys | Asp | Phe | Gln | Pro | Tyr | Phe | Lys | Gly | Glu | Ile | Phe | Leu | Asp | 125 | 130 | 135 |
| Glu | Lys | Lys | Lys | Phe | Tyr | Gly | Pro | Gln | Arg | Arg | Lys | Met | Met | Phe | 140 | 145 | 150 |
| Met | Gly | Phe | Ile | Arg | Leu | Gly | Val | Trp | Tyr | Asn | Phe | Phe | Arg | Ala | 155 | 160 | 165 |
| Trp | Asn | Gly | Gly | Phe | Ser | Gly | Asn | Leu | Glu | Gly | Glu | Gly | Phe | Ile | 170 | 175 | 180 |
| Leu | Gly | Gly | Val | Phe | Val | Val | Gly | Ser | Gly | Lys | Gln | Gly | Ile | Leu | 185 | 190 | 195 |
| Leu | Glu | His | Arg | Glu | Lys | Glu | Phe | Gly | Asp | Lys | Val | Asn | Leu | Leu | 200 | 205 | 210 |
| Ser | Val | Leu | Glu | Ala | Ala | Lys | Met | Ile | Lys | Pro | Gln | Thr | Leu | Ala | 215 | 220 | 225 |
| Ser Glu Lys Lys | | | | | | | | | | | | | | | | | |

<210> 374
 <211> 744
 <212> DNA
 <213> Homo sapiens

<400> 374
 acggaccgag ggttcgaggg agggacacgg accaggaacc tgagctaggt 50
 caaagacgcc cgggccaggt gccccgtcgc aggtgccctt ggccggagat 100
 gcggtaggag gggcgagcgc gagaagcccc ttctcggcg ctgccaaacc 150
 gccaccacgc ccatggcgaa ccccgggctg gggctgcttc tggcgctggg 200

cctgccgttc ctgctggccc gctggggccg agcctggggg caaatacaga 250
 ccacttctgc aaatgagaat agcactgttt tgccttcata caccagctcc 300
 agctccgatg gcaacctgcg tccggaagcc atcactgcta tcatactggt 350
 cttctccctc ttggctgcct tgctcctggc tgtggggctg gcactgttgg 400
 tgcggaagct tggggagaag cggcagacgg agggcaccta ccggcccagt 450
 agcgaggagc agttctcca tgcagccgag gcccgggccc ctcaggactc 500
 caaggagacg gtgcagggt gcctgcccac ctaggtcccc tctcctgcat 550
 ctgtctccct tcattgctgt gtgaccttgg ggaaaggcag tgcctctct 600
 gggcagtcag atccaccag tgcttaatag cagggaagaa ggtacttcaa 650
 agactctgcc cctgaggta agagaggatg gggctattca cttttatata 700
 tttatataaa attagtagtg agatgtaaaa aaaaaaaaaa aaaa 744

<210> 375
 <211> 123
 <212> PRT
 <213> Homo sapiens

<400> 375
 Met Ala Asn Pro Gly Leu Gly Leu Leu Leu Ala Leu Gly Leu Pro
 1 5 10 15
 Phe Leu Leu Ala Arg Trp Gly Arg Ala Trp Gly Gln Ile Gln Thr
 20 25 30
 Thr Ser Ala Asn Glu Asn Ser Thr Val Leu Pro Ser Ser Thr Ser
 35 40 45
 Ser Ser Ser Asp Gly Asn Leu Arg Pro Glu Ala Ile Thr Ala Ile
 50 55 60
 Ile Val Val Phe Ser Leu Leu Ala Ala Leu Leu Leu Ala Val Gly
 65 70 75
 Leu Ala Leu Leu Val Arg Lys Leu Arg Glu Lys Arg Gln Thr Glu
 80 85 90
 Gly Thr Tyr Arg Pro Ser Ser Glu Glu Gln Phe Ser His Ala Ala
 95 100 105
 Glu Ala Arg Ala Pro Gln Asp Ser Lys Glu Thr Val Gln Gly Cys
 110 115 120
 Leu Pro Ile

<210> 376
 <211> 713

<212> DNA
<213> Homo sapiens

<400> 376
aatatatcat ctatttatca ttaatcaata atgtattctt ttattccaat 50
aacatttggg ttttgggatt ttaattttca aacacagcag aatgacattt 100
tttctgtcac tattattatt gttggtatgt gaagctattt ggagatccaa 150
ttcaggaagc aacacattgg agaatggcta ctttctatca agaaataaag 200
agaaccacag tcaaccaca caatcatctt tagaagacag tgtgactcct 250
accaaagctg tcaaaaccac aggcaagggc atagttaaag gacggaatct 300
tgactcaaga gggttaattc ttggtgctga agcctggggc aggggtgtaa 350
agaaaaacac ttagattcaa tgattgtaaa ttttaaggcaa atacacatat 400
tagtattacc ttagtgtaat gtatccctgt catatataca ataaggtgaa 450
attataagta ccctatgcag ttggctggac agttctaaat tggactttat 500
taatttttaa aatcagtaac tgatttatca ctggctatgt gcttagatct 550
acaggagatc atataatttg atacaaataa aagaaaagtg ttctctcccc 600
ttacagaatt gacattttaa atgcgataca gttagaatag gaaatatgac 650
attagaaagg aagaatgaca gggagaaagg aaagaaggga aatgttgcc 700
aaggaaaaaa aaa 713

<210> 377
<211> 90
<212> PRT
<213> Homo sapiens

<400> 377
Met Thr Phe Phe Leu Ser Leu Leu Leu Leu Leu Val Cys Glu Ala
1 5 10 15
Ile Trp Arg Ser Asn Ser Gly Ser Asn Thr Leu Glu Asn Gly Tyr
20 25 30
Phe Leu Ser Arg Asn Lys Glu Asn His Ser Gln Pro Thr Gln Ser
35 40 45
Ser Leu Glu Asp Ser Val Thr Pro Thr Lys Ala Val Lys Thr Thr
50 55 60
Gly Lys Gly Ile Val Lys Gly Arg Asn Leu Asp Ser Arg Gly Leu
65 70 75
Ile Leu Gly Ala Glu Ala Trp Gly Arg Gly Val Lys Lys Asn Thr
80 85 90

<210> 378
<211> 3265
<212> DNA
<213> Homo sapiens

<400> 378
gccaggaata actagagagg aacaatgggg ttattcagag gttttgtttt 50
cctcttagtt ctgtgcctgc tgcaccagtc aaatacttcc ttcattaagc 100
tgaataataa tggctttgaa gatattgtca ttgttataga tcctagtgtg 150
ccagaagatg aaaaaataat tgaacaaata gaggatatgg tgactacagc 200
ttctacgtac ctgtttgaag ccacagaaaa aagatttttt ttcaaaaatg 250
tatctatatt aattcctgag aattggaagg aaaatcctca gtacaaaagg 300
ccaaaacatg aaaaccataa acatgctgat gttatagttg caccacctac 350
actcccaggt agagatgaac catacaccaa gcagttcaca gaatgtggag 400
agaaaggcga atacattcac ttcacccctg accttctact tggaaaaaaa 450
caaatgaat atggaccacc aggcaaactg tttgtccatg agtgggctca 500
cctccggtgg ggagtgtttg atgagtacaa tgaagatcag cttttctacc 550
gtgctaagtc aaaaaaatc gaagcaacaa ggtgttccgc aggtatctct 600
ggtagaaata gagtttataa gtgtcaagga ggcagctgtc ttagtagagc 650
atgcagaatt gattctacaa caaaactgta tggaaaagat tgtcaattct 700
ttcctgataa agtacaacaa gaaaaagcat ccataatgtt tatgcaaagt 750
attgattctg ttgttgaatt ttgtaacgaa aaaaccata atcaagaagc 800
tccaagccta caaacataa agtgcaattt tagaagtaca tgggaggtga 850
ttagcaattc tgaggatttt aaaaacacca taccatggg gacaccacct 900
cctccacctg tcttctcatt gctgaagatc agtcaaagaa ttgtgtgctt 950
agttcttgat aagtctggaa gcatgggggg taaggaccgc ctaaatcgaa 1000
tgaatcaagc agcaaacat ttctgtctgc agactgttga aaatggatcc 1050
tgggtgggga tggttcactt tgatagtact gccactattg taaataagct 1100
aatccaaata aaaagcagtg atgaaagaaa cacactcatg gcaggattac 1150
ctacatatcc tctgggagga acttccatct gctctggaat taaatatgca 1200
tttcaggtga ttggagagct acattcccaa ctcgatggat ccgaagtact 1250

gctgctgact gatggggagg ataacactgc aagttcttgt attgatgaag 1300
tgaaacaaag tggggccatt gttcatttta ttgctttggg aagagctgct 1350
gatgaagcag taatagagat gagcaagata acaggaggaa gtcattttta 1400
tgtttcagat gaagctcaga acaatggcct cattgatgct tttggggctc 1450
ttacatcagg aaatactgat ctctcccaga agtcccttca gctcgaaagt 1500
aagggattaa cactgaatag taatgcctgg atgaacgaca ctgtcataat 1550
tgatagtaca gtgggaaagg acacgttctt tctcatcaca tggaacagtc 1600
tgctcccag tatttctctc tgggatccca gtggaacaat aatggaaaat 1650
ttcacagtgg atgcaacttc caaaatggcc tatctcagta ttccaggaac 1700
tgcaaagggtg ggcacttggg catacaatct tcaagccaaa gcgaaccag 1750
aaacattaac tattacagta acttctcgag cagcaaattc ttctgtgcct 1800
ccaatcacag tgaatgctaa aatgaataag gacgtaaaca gtttcccag 1850
ccaatgatt gtttacgcag aaattctaca aggatatgta cctgttcttg 1900
gagccaatgt gactgctttc attgaatcac agaatggaca tacagaagtt 1950
ttggaacttt tggataatgg tgcaggcgct gattctttca agaatgatgg 2000
agtctactcc aggtatttta cagcatatac agaaaatggc agatatagct 2050
taaaagttcg ggctcatgga ggagcaaaca ctgccaggct aaaattacgg 2100
cctccactga atagagccgc gtacatacca ggctgggtag tgaacgggga 2150
aattgaagca aacccgcca gacctgaaat tgatgaggat actcagacca 2200
ccttgaggga tttcagccga acagcatccg gaggtgcatt tgtggtatca 2250
caagtcccaa gccttccctt gcctgaccaa taccaccaa gtcaaatcac 2300
agacctgat gccacagttc atgaggataa gattattctt acatggacag 2350
caccaggaga taattttgat gttggaaaag ttcaacgtta tatcataaga 2400
ataagtgcaa gtattcttga tctaagagac agttttgatg atgctcttca 2450
agtaaatact actgatctgt caccaaagga ggccaactcc aaggaaagct 2500
ttgcatttaa accagaaaat atctcagaag aaaatgcaac ccacatattt 2550
attgccatta aaagtataga taaaagcaat ttgacatcaa aagtatccaa 2600
cattgcacaa gtaactttgt ttatccctca agcaaatect gatgacattg 2650
atcctacacc tactcctact cctactccta ctctgataa aagtcataat 2700

tctggagtta atatttctac gctgggtattg tctgtgattg ggtctgttgt 2750
aattgttaac tttatttttaa gtaccaccat ttgaacctta acgaagaaaa 2800
aaatcttcaa gtagacctag aagagagttt taaaaaacia aacaatgtaa 2850
gtaaaggata tttctgaatc ttaaaattca tcccatgtgt gatcataaac 2900
tcataaaaaat aattttaaga tgtcggaaaa ggatactttg attaaataaa 2950
aacactcatg gatatgtaaa aactgtcaag attaaaattt aatagtttca 3000
tttatttggt attttatttg taagaaatag tgatgaacia agatcctttt 3050
tcatactgat acctggttgt atattatttg atgcaacagt tttctgaaat 3100
gatatttcaa attgcatcaa gaaattaaaa tcatttatct gagtagtcaa 3150
aatacaagta aaggagagca aataaacia atttggaaaa aaaaaaaaaa 3200
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 3250
aaaaaaaaaa aaaaa 3265

<210> 379
<211> 919
<212> PRT
<213> Homo sapiens

<400> 379
Met Gly Leu Phe Arg Gly Phe Val Phe Leu Leu Val Leu Cys Leu
1 5 10 15
Leu His Gln Ser Asn Thr Ser Phe Ile Lys Leu Asn Asn Asn Gly
20 25 30
Phe Glu Asp Ile Val Ile Val Ile Asp Pro Ser Val Pro Glu Asp
35 40 45
Glu Lys Ile Ile Glu Gln Ile Glu Asp Met Val Thr Thr Ala Ser
50 55 60
Thr Tyr Leu Phe Glu Ala Thr Glu Lys Arg Phe Phe Phe Lys Asn
65 70 75
Val Ser Ile Leu Ile Pro Glu Asn Trp Lys Glu Asn Pro Gln Tyr
80 85 90
Lys Arg Pro Lys His Glu Asn His Lys His Ala Asp Val Ile Val
95 100 105
Ala Pro Pro Thr Leu Pro Gly Arg Asp Glu Pro Tyr Thr Lys Gln
110 115 120
Phe Thr Glu Cys Gly Glu Lys Gly Glu Tyr Ile His Phe Thr Pro
125 130 135

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Leu | Leu | Leu | Gly | Lys | Lys | Gln | Asn | Glu | Tyr | Gly | Pro | Pro | Gly | 140 | 145 | 150 |
| Lys | Leu | Phe | Val | His | Glu | Trp | Ala | His | Leu | Arg | Trp | Gly | Val | Phe | 155 | 160 | 165 |
| Asp | Glu | Tyr | Asn | Glu | Asp | Gln | Pro | Phe | Tyr | Arg | Ala | Lys | Ser | Lys | 170 | 175 | 180 |
| Lys | Ile | Glu | Ala | Thr | Arg | Cys | Ser | Ala | Gly | Ile | Ser | Gly | Arg | Asn | 185 | 190 | 195 |
| Arg | Val | Tyr | Lys | Cys | Gln | Gly | Gly | Ser | Cys | Leu | Ser | Arg | Ala | Cys | 200 | 205 | 210 |
| Arg | Ile | Asp | Ser | Thr | Thr | Lys | Leu | Tyr | Gly | Lys | Asp | Cys | Gln | Phe | 215 | 220 | 225 |
| Phe | Pro | Asp | Lys | Val | Gln | Thr | Glu | Lys | Ala | Ser | Ile | Met | Phe | Met | 230 | 235 | 240 |
| Gln | Ser | Ile | Asp | Ser | Val | Val | Glu | Phe | Cys | Asn | Glu | Lys | Thr | His | 245 | 250 | 255 |
| Asn | Gln | Glu | Ala | Pro | Ser | Leu | Gln | Asn | Ile | Lys | Cys | Asn | Phe | Arg | 260 | 265 | 270 |
| Ser | Thr | Trp | Glu | Val | Ile | Ser | Asn | Ser | Glu | Asp | Phe | Lys | Asn | Thr | 275 | 280 | 285 |
| Ile | Pro | Met | Val | Thr | Pro | Pro | Pro | Pro | Pro | Val | Phe | Ser | Leu | Leu | 290 | 295 | 300 |
| Lys | Ile | Ser | Gln | Arg | Ile | Val | Cys | Leu | Val | Leu | Asp | Lys | Ser | Gly | 305 | 310 | 315 |
| Ser | Met | Gly | Gly | Lys | Asp | Arg | Leu | Asn | Arg | Met | Asn | Gln | Ala | Ala | 320 | 325 | 330 |
| Lys | His | Phe | Leu | Leu | Gln | Thr | Val | Glu | Asn | Gly | Ser | Trp | Val | Gly | 335 | 340 | 345 |
| Met | Val | His | Phe | Asp | Ser | Thr | Ala | Thr | Ile | Val | Asn | Lys | Leu | Ile | 350 | 355 | 360 |
| Gln | Ile | Lys | Ser | Ser | Asp | Glu | Arg | Asn | Thr | Leu | Met | Ala | Gly | Leu | 365 | 370 | 375 |
| Pro | Thr | Tyr | Pro | Leu | Gly | Gly | Thr | Ser | Ile | Cys | Ser | Gly | Ile | Lys | 380 | 385 | 390 |
| Tyr | Ala | Phe | Gln | Val | Ile | Gly | Glu | Leu | His | Ser | Gln | Leu | Asp | Gly | 395 | 400 | 405 |
| Ser | Glu | Val | Leu | Leu | Leu | Thr | Asp | Gly | Glu | Asp | Asn | Thr | Ala | Ser | 410 | 415 | 420 |

| | | |
|-----------------|---------------------|-------------------------|
| Ser Cys Ile Asp | Glu Val Lys Gln Ser | Gly Ala Ile Val His Phe |
| 425 | | 430 435 |
| Ile Ala Leu Gly | Arg Ala Ala Asp Glu | Ala Val Ile Glu Met Ser |
| 440 | | 445 450 |
| Lys Ile Thr Gly | Gly Ser His Phe Tyr | Val Ser Asp Glu Ala Gln |
| 455 | | 460 465 |
| Asn Asn Gly Leu | Ile Asp Ala Phe Gly | Ala Leu Thr Ser Gly Asn |
| 470 | | 475 480 |
| Thr Asp Leu Ser | Gln Lys Ser Leu Gln | Leu Glu Ser Lys Gly Leu |
| 485 | | 490 495 |
| Thr Leu Asn Ser | Asn Ala Trp Met Asn | Asp Thr Val Ile Ile Asp |
| 500 | | 505 510 |
| Ser Thr Val Gly | Lys Asp Thr Phe Phe | Leu Ile Thr Trp Asn Ser |
| 515 | | 520 525 |
| Leu Pro Pro Ser | Ile Ser Leu Trp Asp | Pro Ser Gly Thr Ile Met |
| 530 | | 535 540 |
| Glu Asn Phe Thr | Val Asp Ala Thr Ser | Lys Met Ala Tyr Leu Ser |
| 545 | | 550 555 |
| Ile Pro Gly Thr | Ala Lys Val Gly Thr | Trp Ala Tyr Asn Leu Gln |
| 560 | | 565 570 |
| Ala Lys Ala Asn | Pro Glu Thr Leu Thr | Ile Thr Val Thr Ser Arg |
| 575 | | 580 585 |
| Ala Ala Asn Ser | Ser Val Pro Pro Ile | Thr Val Asn Ala Lys Met |
| 590 | | 595 600 |
| Asn Lys Asp Val | Asn Ser Phe Pro Ser | Pro Met Ile Val Tyr Ala |
| 605 | | 610 615 |
| Glu Ile Leu Gln | Gly Tyr Val Pro Val | Leu Gly Ala Asn Val Thr |
| 620 | | 625 630 |
| Ala Phe Ile Glu | Ser Gln Asn Gly His | Thr Glu Val Leu Glu Leu |
| 635 | | 640 645 |
| Leu Asp Asn Gly | Ala Gly Ala Asp Ser | Phe Lys Asn Asp Gly Val |
| 650 | | 655 660 |
| Tyr Ser Arg Tyr | Phe Thr Ala Tyr Thr | Glu Asn Gly Arg Tyr Ser |
| 665 | | 670 675 |
| Leu Lys Val Arg | Ala His Gly Gly Ala | Asn Thr Ala Arg Leu Lys |
| 680 | | 685 690 |
| Leu Arg Pro Pro | Leu Asn Arg Ala Ala | Tyr Ile Pro Gly Trp Val |
| 695 | | 700 705 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Asn | Gly | Glu | Ile | Glu | Ala | Asn | Pro | Pro | Arg | Pro | Glu | Ile | Asp | 710 | 715 | 720 |
| Glu | Asp | Thr | Gln | Thr | Thr | Leu | Glu | Asp | Phe | Ser | Arg | Thr | Ala | Ser | 725 | 730 | 735 |
| Gly | Gly | Ala | Phe | Val | Val | Ser | Gln | Val | Pro | Ser | Leu | Pro | Leu | Pro | 740 | 745 | 750 |
| Asp | Gln | Tyr | Pro | Pro | Ser | Gln | Ile | Thr | Asp | Leu | Asp | Ala | Thr | Val | 755 | 760 | 765 |
| His | Glu | Asp | Lys | Ile | Ile | Leu | Thr | Trp | Thr | Ala | Pro | Gly | Asp | Asn | 770 | 775 | 780 |
| Phe | Asp | Val | Gly | Lys | Val | Gln | Arg | Tyr | Ile | Ile | Arg | Ile | Ser | Ala | 785 | 790 | 795 |
| Ser | Ile | Leu | Asp | Leu | Arg | Asp | Ser | Phe | Asp | Asp | Ala | Leu | Gln | Val | 800 | 805 | 810 |
| Asn | Thr | Thr | Asp | Leu | Ser | Pro | Lys | Glu | Ala | Asn | Ser | Lys | Glu | Ser | 815 | 820 | 825 |
| Phe | Ala | Phe | Lys | Pro | Glu | Asn | Ile | Ser | Glu | Glu | Asn | Ala | Thr | His | 830 | 835 | 840 |
| Ile | Phe | Ile | Ala | Ile | Lys | Ser | Ile | Asp | Lys | Ser | Asn | Leu | Thr | Ser | 845 | 850 | 855 |
| Lys | Val | Ser | Asn | Ile | Ala | Gln | Val | Thr | Leu | Phe | Ile | Pro | Gln | Ala | 860 | 865 | 870 |
| Asn | Pro | Asp | Asp | Ile | Asp | Pro | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Pro | 875 | 880 | 885 |
| Thr | Pro | Asp | Lys | Ser | His | Asn | Ser | Gly | Val | Asn | Ile | Ser | Thr | Leu | 890 | 895 | 900 |
| Val | Leu | Ser | Val | Ile | Gly | Ser | Val | Val | Ile | Val | Asn | Phe | Ile | Leu | 905 | 910 | 915 |
| Ser | Thr | Thr | Ile | | | | | | | | | | | | | | |

<210> 380

<211> 3877

<212> DNA

<213> Homo sapiens

<400> 380

ctccttaggt ggaaaccctg ggagtagagt actgacagca aagaccggga 50

aagaccatac gtccccgggc aggggtgaca acaggtgtca tctttttgat 100

ctcgtgtgtg gctgccttcc tatttcaagg aaagacgcca aggtaatttt 150

gacccagagg agcaatgatg tagccacctc ctaaccttcc cttcttgaac 200
ccccagttat gccaggatth actagagagt gtcaactcaa ccagcaagcg 250
gtccttccg ctttaacttgt ggttggagga gagaaccttt gtggggctgc 300
gttctcttag cagtgtcag aagtgacttg cctgaggggtg gaccagaaga 350
aaggaaaggt cccctcttgc tgttggctgc acatcaggaa ggctgtgatg 400
ggaatgaagg tgaaaacttg gagatttcac ttcagtcatt gcttctgcct 450
gcaagatcat cctttaaaag tagagaagct gctctgtgtg gtgggttaact 500
ccaagaggca gaactcgttc tagaaggaaa tggatgcaag cagctccggg 550
ggccccaac gcatgcttcc tgtggtctag ccagggaag cccttccgtg 600
ggggccccgg ctttgagggg tgcaccgggt tctggacgca tggctgattc 650
ctgaatgatg atggttcgcc gggggctgct tgcgtggatt tcccgggtgg 700
tggttttgc ggtgtcctc tgcgtgtcta tctctgtcct gtacatgttg 750
gcctgcaccc caaaaggtga cgaggagcag ctggcactgc ccagggccaa 800
cagccccacg gggaaggagg ggtaccaggc cgtccttcag gagtgggagg 850
agcagcaccg caactacgtg agcagcctga agcggcagat cgcacagctc 900
aaggaggagc tgcaggagag gagtgcagc ctcaggaatg ggcagtacca 950
agccagcgat gctgctggcc tgggtctgga caggagcccc ccagagaaaa 1000
cccaggccga cctcctggcc ttcctgcact cgcagggtgga caaggcagag 1050
gtgaatgctg gcgtcaagct ggccacagag tatgcagcag tgcctttcga 1100
tagctttact ctacagaagg tgtaccagct ggagactggc cttaccgcc 1150
accccgagga gaagcctgtg aggaaggaca agcgggatga gttggtggaa 1200
gccattgaat cagccttggg gaccctgaac aatcctgcag agaacagccc 1250
caatcacctg ccttacacgg cctctgattt catagaaggg atctaccgaa 1300
cagaaaggga caaagggaca ttgtatgagc tcaccttcaa aggggaccac 1350
aaacacgaat tcaaacggct catcttattt cgaccattca gccccatcat 1400
gaaagtgaat aatgaaaagc tcaacatggc caacacgctt atcaatgtta 1450
tcgtgcctct agcaaaaagg gtggacaagt tccggcagtt catgcagaat 1500
ttcagggaga tgtgcattga gcaggatggg agagtccatc tcaactgttg 1550

ttacttttggg aaagaagaaa taaatgaagt caaaggaata cttgaaaaca 1600
cttccaaagc tgccaacttc aggaacttta ccttcatcca gctgaatgga 1650
gaattttctc ggggaaaggg acttgatggt ggagcccgct tctggaaggg 1700
aagcaacgtc cttctctttt tctgtgatgt ggacatctac ttcacatctg 1750
aattcctcaa tacgtgtagg ctgaatacac agccaggga gaaggtattt 1800
tatccagttc ttttcagtca gtacaatcct ggcataatat acggccacca 1850
tgatgcagtc cctcccttgg aacagcagct ggtcataaag aaggaaactg 1900
gattttggag agactttgga tttgggatga cgtgtcagta tcggtcagac 1950
ttcatcaata taggtgggtt tgatctggac atcaaaggct ggggcggaga 2000
ggatgtgcac ctttatcgca agtatctcca cagcaacctc atagtggtag 2050
ggacgcctgt gcgaggactc ttccacctct ggcatgagaa gcgctgcatg 2100
gacgagctga ccccgagca gtacaagatg tgcatgcagt ccaaggccat 2150
gaacgaggca tcccacggcc agctgggcat gctgggtgttc aggcacgaga 2200
tagaggctca ccttcgcaaa cagaaacaga agacaagtag caaaaaaaca 2250
tgaactccca gagaaggatt gtgggagaca ctttttcttt ccttttgcaa 2300
ttactgaaag tggctgcaac agagaaaaga cttccataaa ggacgacaaa 2350
agaattggac tgatgggtca gagatgagaa agcctccgat ttctctctgt 2400
tgggcttttt acaacagaaa tcaaatctc cgctttgcct gcaaaagtaa 2450
cccagttgca ccctgtgaag tgtctgacaa aggcagaatg cttgtgagat 2500
tataagccta atgggtgtgga ggttttgatg gtgtttacaa tacactgaga 2550
cctgttgttt tgtgtgctca ttgaaatatt catgatttaa gagcagtttt 2600
gtaaaaaatt cattagcatg aaaggcaagc atatttctcc tcatatgaat 2650
gagcctatca gcagggctct agtttctagg aatgctaaaa tatcagaagg 2700
caggagagga gataggctta ttatgatact agtgagtaca ttaagtaaaa 2750
taaaatggac cagaaaagaa aagaaacat aaatatcgtg tcatattttc 2800
ccaagatta accaaaaata atctgcttat ctttttggtt gtccctttta 2850
ctgtctccgt ttttttcttt tatttaaaaa tgcacttttt ttcccttggtg 2900
agttatagtc tgcttattta attaccactt tgcaagcctt acaagagagc 2950
acaagttggc ctacattttt atatttttta agaagatact ttgagatgca 3000

ttatgagaac tttcagttca aagcatcaaa ttgatgccat atccaaggac 3050
 atgccaaatg ctgattctgt caggcactga atgtcaggca ttgagacata 3100
 gggaaggaat ggtttgtact aatacagacg tacagatact ttctctgaag 3150
 agtattttcg aagaggagca actgaacact ggaggaaaag aaaatgacac 3200
 tttctgcttt acagaaaagg aaactcattc agactgggtga tatcgtgatg 3250
 tacctaaaag tcagaaacca cattttctcc tcagaagtag ggaccgcttt 3300
 cttacctgtt taaataaacc aaagtatacc gtgtgaacca aacaatctct 3350
 tttcaaaaca ggggtgctcct cctggcttct ggcttcata agaagaaatg 3400
 gagaaaaata tatatatata tatatatatt gtgaaagatc aatccatctg 3450
 ccagaatcta gtgggatgga agtttttgct acatgttatc caccacaggc 3500
 cagggtgaag taactgaatt attttttaaa ttaagcagtt ctactcaatc 3550
 accaagatgc ttctgaaaat tgcattttat taccatttca aactattttt 3600
 taaaaataaa tacagttaac atagagtggg ttcttcattc atgtgaaaat 3650
 tattagccag caccagatgc atgagctaata tatctctttg agtccttgct 3700
 tctgtttgct cacagtaaac tcattgttta aaagcttcaa gaacattcaa 3750
 gctgttggtg tggttaaaaaa tgcattgtat tgatttgtac tggtagttta 3800
 tgaaatttaa ttaaacaca ggccatgaat ggaaggtggg attgcacagc 3850
 taataaaata tgatttgtgg atatgaa 3877

<210> 381

<211> 532

<212> PRT

<213> Homo sapiens

<400> 381

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Met | Met | Val | Arg | Arg | Gly | Leu | Leu | Ala | Trp | Ile | Ser | Arg | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Val | Val | Leu | Leu | Val | Leu | Leu | Cys | Cys | Ala | Ile | Ser | Val | Leu | Tyr |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Met | Leu | Ala | Cys | Thr | Pro | Lys | Gly | Asp | Glu | Glu | Gln | Leu | Ala | Leu |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Pro | Arg | Ala | Asn | Ser | Pro | Thr | Gly | Lys | Glu | Gly | Tyr | Gln | Ala | Val |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Leu | Gln | Glu | Trp | Glu | Glu | Gln | His | Arg | Asn | Tyr | Val | Ser | Ser | Leu |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Lys | Arg | Gln | Ile | Ala | Gln | Leu | Lys | Glu | Glu | Leu | Gln | Glu | Arg | Ser | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Glu | Gln | Leu | Arg | Asn | Gly | Gln | Tyr | Gln | Ala | Ser | Asp | Ala | Ala | Gly | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Leu | Gly | Leu | Asp | Arg | Ser | Pro | Pro | Glu | Lys | Thr | Gln | Ala | Asp | Leu | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Leu | Ala | Phe | Leu | His | Ser | Gln | Val | Asp | Lys | Ala | Glu | Val | Asn | Ala | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Gly | Val | Lys | Leu | Ala | Thr | Glu | Tyr | Ala | Ala | Val | Pro | Phe | Asp | Ser | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Phe | Thr | Leu | Gln | Lys | Val | Tyr | Gln | Leu | Glu | Thr | Gly | Leu | Thr | Arg | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| His | Pro | Glu | Glu | Lys | Pro | Val | Arg | Lys | Asp | Lys | Arg | Asp | Glu | Leu | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Val | Glu | Ala | Ile | Glu | Ser | Ala | Leu | Glu | Thr | Leu | Asn | Asn | Pro | Ala | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Glu | Asn | Ser | Pro | Asn | His | Arg | Pro | Tyr | Thr | Ala | Ser | Asp | Phe | Ile | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Glu | Gly | Ile | Tyr | Arg | Thr | Glu | Arg | Asp | Lys | Gly | Thr | Leu | Tyr | Glu | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Leu | Thr | Phe | Lys | Gly | Asp | His | Lys | His | Glu | Phe | Lys | Arg | Leu | Ile | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Leu | Phe | Arg | Pro | Phe | Ser | Pro | Ile | Met | Lys | Val | Lys | Asn | Glu | Lys | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Leu | Asn | Met | Ala | Asn | Thr | Leu | Ile | Asn | Val | Ile | Val | Pro | Leu | Ala | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Lys | Arg | Val | Asp | Lys | Phe | Arg | Gln | Phe | Met | Gln | Asn | Phe | Arg | Glu | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Met | Cys | Ile | Glu | Gln | Asp | Gly | Arg | Val | His | Leu | Thr | Val | Val | Tyr | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Phe | Gly | Lys | Glu | Glu | Ile | Asn | Glu | Val | Lys | Gly | Ile | Leu | Glu | Asn | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Thr | Ser | Lys | Ala | Ala | Asn | Phe | Arg | Asn | Phe | Thr | Phe | Ile | Gln | Leu | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Asn | Gly | Glu | Phe | Ser | Arg | Gly | Lys | Gly | Leu | Asp | Val | Gly | Ala | Arg | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Phe | Trp | Lys | Gly | Ser | Asn | Val | Leu | Leu | Phe | Phe | Cys | Asp | Val | Asp | |
| | | | | 350 | | | | | 355 | | | | | 360 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Tyr | Phe | Thr | Ser | Glu | Phe | Leu | Asn | Thr | Cys | Arg | Leu | Asn | Thr | 365 | 370 | 375 |
| Gln | Pro | Gly | Lys | Lys | Val | Phe | Tyr | Pro | Val | Leu | Phe | Ser | Gln | Tyr | 380 | 385 | 390 |
| Asn | Pro | Gly | Ile | Ile | Tyr | Gly | His | His | Asp | Ala | Val | Pro | Pro | Leu | 395 | 400 | 405 |
| Glu | Gln | Gln | Leu | Val | Ile | Lys | Lys | Glu | Thr | Gly | Phe | Trp | Arg | Asp | 410 | 415 | 420 |
| Phe | Gly | Phe | Gly | Met | Thr | Cys | Gln | Tyr | Arg | Ser | Asp | Phe | Ile | Asn | 425 | 430 | 435 |
| Ile | Gly | Gly | Phe | Asp | Leu | Asp | Ile | Lys | Gly | Trp | Gly | Gly | Glu | Asp | 440 | 445 | 450 |
| Val | His | Leu | Tyr | Arg | Lys | Tyr | Leu | His | Ser | Asn | Leu | Ile | Val | Val | 455 | 460 | 465 |
| Arg | Thr | Pro | Val | Arg | Gly | Leu | Phe | His | Leu | Trp | His | Glu | Lys | Arg | 470 | 475 | 480 |
| Cys | Met | Asp | Glu | Leu | Thr | Pro | Glu | Gln | Tyr | Lys | Met | Cys | Met | Gln | 485 | 490 | 495 |
| Ser | Lys | Ala | Met | Asn | Glu | Ala | Ser | His | Gly | Gln | Leu | Gly | Met | Leu | 500 | 505 | 510 |
| Val | Phe | Arg | His | Glu | Ile | Glu | Ala | His | Leu | Arg | Lys | Gln | Lys | Gln | 515 | 520 | 525 |
| Lys | Thr | Ser | Ser | Lys | Lys | Thr | | | | | | | | | 530 | | |

<210> 382

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 382

ctcggggaaa gggacttgat gttgg 25

<210> 383

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 383

gcgaagggtga gcctctatct cgtgcc 26

<210> 384

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 384

cagcctacac gtattgagg 19

<210> 385

<211> 48

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 385

cagtcagtac aatcctggca taatatacgg ccaccatgat gcagtccc 48

<210> 386

<211> 1346

<212> DNA

<213> Homo sapiens

<400> 386

gaaagaatgt tgtggctgct cttttttctg gtgactgcc a ttcattgctga 50

actctgtcaa ccagggtgcag aaaatgcttt taaagtgaga cttagtatca 100

gaacagctct gggagataaa gcatatgcct gggataccaa tgaagaatac 150

ctcttcaaag cgatggtagc tttctccatg agaaaagtgc ccaacagaga 200

agcaacagaa atttcccatg tcctactttg caatgtaacc cagagggtat 250

cattctgggt tgtgggttaca gacccttcaa aaaatcacac ccttcctgct 300

gttgagggtgc aatcagccat aagaatgaac aagaaccgga tcaacaatgc 350

cttctttcta aatgaccaa ctctggaatt tttaaaaatc ccttccacac 400

ttgcaccacc catggaccca tctgtgcca tctggattat tatatttggt 450

gtgatatttt gcatcatcat agttgcaatt gcactactga ttttatcagg 500

gatctggcaa cgtagaagaa agaacaaaga accatctgaa gtggatgacg 550

ctgaagataa gtgtgaaaac atgatcaca ttgaaaatgg catcccctct 600

gatcccctgg acatgaaggg gggcatatta atgatgcctt catgacagag 650

gatgagaggg tcacccctct ctgaagggt gttgttctgc ttcctcaaga 700

aattaaacat ttgtttctgt gtgactgctg agcatcctga aataccaaga 750
gcagatcata tattttgttt caccattctt cttttgtaat aaattttgaa 800
tgtgcttgaa agtgaaaagc aatcaattat accaccaac accactgaaa 850
tcataagcta ttcacgactc aaaatattct aaaatatttt tctgacagta 900
tagtgataaa atgtgggtcat gtggtatttg tagttattga tttaagcatt 950
tttagaaata agatcaggca tatgtatata ttttcacact tcaaagacct 1000
aaggaaaaat aaattttcca gtggagaata catataatat ggtgtagaaa 1050
tcattgaaaa tggatccttt ttgacgatca cttatatcac tctgtatatg 1100
actaagtaaa caaaagtgag aagtaattat tgtaaattgga tggataaaaa 1150
tgggaattact catatacagg gtggaatttt atcctgttat cacaccaaca 1200
gttgattata tattttctga atatcagccc ctaataggac aattctattt 1250
gttgaccatt tctacaattt gtaaaagtcc aatctgtgct aacttaataa 1300
agtaataatc atctcttttt aaaaaaaaaa aaaaaaaaaa aaaaaa 1346

<210> 387
<211> 212
<212> PRT
<213> Homo sapiens

<400> 387
Met Leu Trp Leu Leu Phe Phe Leu Val Thr Ala Ile His Ala Glu
1 5 10 15
Leu Cys Gln Pro Gly Ala Glu Asn Ala Phe Lys Val Arg Leu Ser
20 25 30
Ile Arg Thr Ala Leu Gly Asp Lys Ala Tyr Ala Trp Asp Thr Asn
35 40 45
Glu Glu Tyr Leu Phe Lys Ala Met Val Ala Phe Ser Met Arg Lys
50 55 60
Val Pro Asn Arg Glu Ala Thr Glu Ile Ser His Val Leu Leu Cys
65 70 75
Asn Val Thr Gln Arg Val Ser Phe Trp Phe Val Val Thr Asp Pro
80 85 90
Ser Lys Asn His Thr Leu Pro Ala Val Glu Val Gln Ser Ala Ile
95 100 105
Arg Met Asn Lys Asn Arg Ile Asn Asn Ala Phe Phe Leu Asn Asp
110 115 120

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gln | Thr | Leu | Glu | Phe | Leu | Lys | Ile | Pro | Ser | Thr | Leu | Ala | Pro | Pro | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Met | Asp | Pro | Ser | Val | Pro | Ile | Trp | Ile | Ile | Ile | Phe | Gly | Val | Ile | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Phe | Cys | Ile | Ile | Ile | Val | Ala | Ile | Ala | Leu | Leu | Ile | Leu | Ser | Gly | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Ile | Trp | Gln | Arg | Arg | Arg | Lys | Asn | Lys | Glu | Pro | Ser | Glu | Val | Asp | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Asp | Ala | Glu | Asp | Lys | Cys | Glu | Asn | Met | Ile | Thr | Ile | Glu | Asn | Gly | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ile | Pro | Ser | Asp | Pro | Leu | Asp | Met | Lys | Gly | Gly | Ile | Leu | Met | Met | |
| | | | | 200 | | | | | 205 | | | | | 210 | |

Pro Ser

<210> 388
 <211> 1371
 <212> DNA
 <213> Homo sapiens

<400> 388
 aactcaaaact cctctctctg ggaaaacgcg gtgcttgctc ctcccggagt 50
 ggcccttgga ggggtgttga gccctcggtc tgccccgtcc ggtctctggg 100
 gccaaaggctg ggtttccctc atgtatggca agagctctac tcgtgcgggtg 150
 cttctctctc ttggcatata gctcacagct ctttggccta tagcagctgt 200
 ggaaatttat acctcccggg tgctggaggc tgtaaatggg acagatgctc 250
 gggttaaaatg cactttctcc agctttgccc ctgtgggtga tgctctaaca 300
 gtgacctgga attttcgctc tctagacggg ggacctgagc agtttgtatt 350
 ctactaccac atagatccct tccaacccat gagtgggcgg ttaaggacc 400
 ggggtgtcttg ggatgggaat cctgagcggc acgatgcctc catccttctc 450
 tggaaactgc agttcgacga caatgggaca tacacctgcc aggtgaagaa 500
 cccacctgat gttgatgggg tgatagggga gatccggctc agcgtcgtgc 550
 aactgtacg cttctctgag atccacttcc tggtctctggc cattggctct 600
 gcctgtgcac tgatgatcat aatagtaatt gtagtggctc tcttccagca 650
 ttaccggaaa aagcgatggg ccgaaagagc tcataaagtg gtggagataa 700
 aatcaaaaga agaggaaagg ctcaaccaag agaaaaaggt ctctgtttat 750

ttagaagaca cagactaaca attttagatg gaagctgaga tgatttccaa 800
 gaacaagaac cctagtatctt cttgaagtta atggaaactt ttctttgggt 850
 tttccagttg tgaccgcttt tccaaccagt tctgcagcat attagattct 900
 agacaagcaa caccctctg gagccagcac agtgctcctc catatcacca 950
 gtcatacaca gcctcattat taaggctctta ttttaatttca gagtgtaaat 1000
 tttttcaagt gctcattagg ttttataaac aagaagctac atttttgccc 1050
 ttaagacact acttacagtg ttatgacttg tatacacata tattgggtatc 1100
 aaaggggata aaagccaatt tgtctgttac atttcctttc acgtatttct 1150
 ttttagcagca cttctgctac taaagttaat gtgtttactc tctttccttc 1200
 ccacattctc aattaaaagg tgagctaagc ctctcgggtg tttctgatta 1250
 acagtaaate ctaaattcaa actgttaaata gacattttta tttttatgtc 1300
 tctccttaac tatgagacac atcttgtttt actgaatttc tttcaatatt 1350
 ccaggtgata gatttttgtc g 1371

<210> 389
 <211> 215
 <212> PRT
 <213> Homo sapiens

<400> 389
 Met Tyr Gly Lys Ser Ser Thr Arg Ala Val Leu Leu Leu Leu Gly
 1 5 10 15
 Ile Gln Leu Thr Ala Leu Trp Pro Ile Ala Ala Val Glu Ile Tyr
 20 25 30
 Thr Ser Arg Val Leu Glu Ala Val Asn Gly Thr Asp Ala Arg Leu
 35 40 45
 Lys Cys Thr Phe Ser Ser Phe Ala Pro Val Gly Asp Ala Leu Thr
 50 55 60
 Val Thr Trp Asn Phe Arg Pro Leu Asp Gly Gly Pro Glu Gln Phe
 65 70 75
 Val Phe Tyr Tyr His Ile Asp Pro Phe Gln Pro Met Ser Gly Arg
 80 85 90
 Phe Lys Asp Arg Val Ser Trp Asp Gly Asn Pro Glu Arg Tyr Asp
 95 100 105
 Ala Ser Ile Leu Leu Trp Lys Leu Gln Phe Asp Asp Asn Gly Thr
 110 115 120
 Tyr Thr Cys Gln Val Lys Asn Pro Pro Asp Val Asp Gly Val Ile

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 125 | | 130 | | 135 | | | | | | | | | |
| Gly | Glu | Ile | Arg | Leu | Ser | Val | Val | His | Thr | Val | Arg | Phe | Ser | Glu |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Ile | His | Phe | Leu | Ala | Leu | Ala | Ile | Gly | Ser | Ala | Cys | Ala | Leu | Met |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ile | Ile | Ile | Val | Ile | Val | Val | Val | Leu | Phe | Gln | His | Tyr | Arg | Lys |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Lys | Arg | Trp | Ala | Glu | Arg | Ala | His | Lys | Val | Val | Glu | Ile | Lys | Ser |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Lys | Glu | Glu | Glu | Arg | Leu | Asn | Gln | Glu | Lys | Lys | Val | Ser | Val | Tyr |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Leu | Glu | Asp | Thr | Asp | | | | | | | | | | |
| | | | | 215 | | | | | | | | | | |

<210> 390
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 390
 ccgaggccat ctagaggcca gagc 24

<210> 391
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 391
 acaggcagag ccaatggcca gagc 24

<210> 392
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 392
 gagaggactg cgggagtttg ggacctttgt gcagacgtgc tcatg 45

<210> 393
 <211> 471
 <212> DNA
 <213> Homo sapiens

<400> 393
gcatttttgt ctgtgctccc tgatcttcag gtcaccacca tgaagttctt 50
agcagtcctg gtactcttgg gagtttccat ctttctggtc tctgcccaga 100
atccgacaac agctgctcca gctgacacgt atccagctac tggctctgct 150
gatgatgaag cccctgatgc tgaaaccact gctgctgcaa ccactgcgac 200
cactgctgct cctaccactg caaccaccgc tgcttctacc actgctcgta 250
aagacattcc agttttaccc aaatgggttg gggatctccc gaatggtaga 300
gtgtgtccct gagatggaat cagcttgagt cttctgcaat tggtcacaac 350
tattcatgct tctgtgatt tcatccaact acttaccttg cctacgatat 400
cccctttatc tctaatacgt ttattttctt tcaaataaaa aataactatg 450
agcaacataa aaaaaaaaaa a 471

<210> 394
<211> 90
<212> PRT
<213> Homo sapiens

<400> 394
Met Lys Phe Leu Ala Val Leu Val Leu Leu Gly Val Ser Ile Phe
1 5 10 15
Leu Val Ser Ala Gln Asn Pro Thr Thr Ala Ala Pro Ala Asp Thr
20 25 30
Tyr Pro Ala Thr Gly Pro Ala Asp Asp Glu Ala Pro Asp Ala Glu
35 40 45
Thr Thr Ala Ala Ala Thr Thr Ala Thr Thr Ala Ala Pro Thr Thr
50 55 60
Ala Thr Thr Ala Ala Ser Thr Thr Ala Arg Lys Asp Ile Pro Val
65 70 75
Leu Pro Lys Trp Val Gly Asp Leu Pro Asn Gly Arg Val Cys Pro
80 85 90

<210> 395
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 395
gctccctgat cttcatgtca ccacc 25

<210> 396
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 396
cagggacaca ctctaccatt cgggag 26

<210> 397
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 397
ccatctttct ggtctctgcc cagaatccga caacagctgc tc 42

<210> 398
<211> 907
<212> DNA
<213> Homo sapiens

<400> 398
ggactctgaa ggtcccaagc agctgctgag gcccccaagg aagtggttcc 50
aaccttggac ccctaggggt ctggatttgc tggtaacaa gataacctga 100
gggcaggacc ccatagggga atgctacctc ctgcccttcc acctgccctg 150
gtgttcacgg tggcctggtc cctccttgcc gagagagtgt cctgggtcag 200
ggacgcagag gacgctcaca gactccagcc ctttgttacc gagaggacac 250
ttggcaaggt ccagcgatgg tccggagtcc acacacagac tggcggcagg 300
gcaggagggg gacagttctg ttgtgcttgg ttggacagta agagggtctt 350
ggccagtcca ggggtggggg cggcaaactc cataaagaac cagagggtct 400
gggccccggc cacagagtca tctgccagc tcctctgctg ctggccagtg 450
ggagtggcac gaggtggggc tttgtgccag taaaaccaca ggctggattt 500
gcctgcgggc catggtccct gtctagggca gcaattctca accttcttgc 550
tctcaggacc ccaaagagct ttcatgtat ctattgattt ttaccacatt 600
agcaattaa actgagaaat gggccgggca cgggtggctca cgcctgtaat 650
cccagcactt tgggaggccg aggcgggtgg atcacctgag atcaggagtt 700
caagaccagc ctggccaaca tggtgaaacc ttgtctacta aaaatacaaa 750

aaattagcca ggcacagtgg tgtgcactgg tagtcccagt tactcgggag 800
gctgaggcag gaaaatcgct tgaaccagg aggcggacgt tgcggtgagc 850
cgagatcgcg ccgctgattc cagcctgggc gacaagagtg agactccatc 900
tcacaca 907

<210> 399
<211> 120
<212> PRT
<213> Homo sapiens

<400> 399
Met Leu Pro Pro Ala Leu Pro Pro Ala Leu Val Phe Thr Val Ala
1 5 10 15
Trp Ser Leu Leu Ala Glu Arg Val Ser Trp Val Arg Asp Ala Glu
20 25 30
Asp Ala His Arg Leu Gln Pro Phe Val Thr Glu Arg Thr Leu Gly
35 40 45
Lys Val Gln Arg Trp Ser Gly Val His Thr Gln Thr Gly Gly Arg
50 55 60
Ala Gly Gly Gly Gln Phe Cys Cys Ala Trp Leu Asp Ser Lys Arg
65 70 75
Val Leu Ala Ser Pro Gly Trp Gly Ala Ala Asn Ser Ile Lys Asn
80 85 90
Gln Arg Val Trp Ala Pro Ala Thr Glu Ser Ser Ala Gln Leu Leu
95 100 105
Cys Cys Trp Pro Val Gly Val Ala Arg Gly Gly Ala Leu Cys Gln
110 115 120

<210> 400
<211> 893
<212> DNA
<213> Homo sapiens

<400> 400
gtcatgccag tgcctgctct gtgcctgctc tgggccctgg caatggtgac 50
ccggcctgcc tcagcgccc ccatgggcgg ccagaaactg gcacagcatg 100
aggagctgac cctgctcttc catgggaccc tgcagctggg ccaggccctc 150
aacggtgtgt acaggaccac ggaggacgg ctgacaaagg ccaggaacag 200
cctgggtctc tatggccgca caatagaact cctggggcag gaggtcagcc 250
ggggccggga tgcagcccag gaacttcggg caagcctgtt ggagactcag 300

atggaggagg atattctgca gctgcaggca gaggccacag ctgaggtgct 350
 gggggaggtg gcccaggcac agaaggtgct acgggacagc gtgcagcggc 400
 tagaagtcca gctgaggagc gcctggctgg gccctgccta ccgagaattt 450
 gaggtcttaa aggctcacgc tgacaagcag agccacatcc tatgggccct 500
 cacaggccac gtgcagcggc agaggcggga gatggtggca cagcagcatc 550
 ggctgcgaca gatccaggag agactccaca cagcggcgct cccagcctga 600
 atctgcctgg atggaactga ggaccaatca tgctgcaagg aacacttcca 650
 cgccccgtga ggcccctgtg caggaggagg ctgcctgttc actgggatca 700
 gccagggcgc cgggccccac ttctgagcac agagcagaga cagacgcagg 750
 cggggacaaa ggagaggat gtagcccat tggggagggg tggaggaagg 800
 acatgtaccc ttctatgcct acacaccct cattaaagca ggtcgtggc 850
 atttcaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa 893

<210> 401
 <211> 198
 <212> PRT
 <213> Homo sapiens

<400> 401
 Met Pro Val Pro Ala Leu Cys Leu Leu Trp Ala Leu Ala Met Val
 1 5 10 15
 Thr Arg Pro Ala Ser Ala Ala Pro Met Gly Gly Pro Glu Leu Ala
 20 25 30
 Gln His Glu Glu Leu Thr Leu Leu Phe His Gly Thr Leu Gln Leu
 35 40 45
 Gly Gln Ala Leu Asn Gly Val Tyr Arg Thr Thr Glu Gly Arg Leu
 50 55 60
 Thr Lys Ala Arg Asn Ser Leu Gly Leu Tyr Gly Arg Thr Ile Glu
 65 70 75
 Leu Leu Gly Gln Glu Val Ser Arg Gly Arg Asp Ala Ala Gln Glu
 80 85 90
 Leu Arg Ala Ser Leu Leu Glu Thr Gln Met Glu Glu Asp Ile Leu
 95 100 105
 Gln Leu Gln Ala Glu Ala Thr Ala Glu Val Leu Gly Glu Val Ala
 110 115 120
 Gln Ala Gln Lys Val Leu Arg Asp Ser Val Gln Arg Leu Glu Val
 125 130 135

| | | | | | | | | | | | | | | |
|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Leu | Arg | Ser | Ala | Trp | Leu | Gly | Pro | Ala | Tyr | Arg | Glu | Phe | Glu |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Val | Leu | Lys | Ala | His | Ala | Asp | Lys | Gln | Ser | His | Ile | Leu | Trp | Ala |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Leu | Thr | Gly | His | Val | Gln | Arg | Gln | Arg | Arg | Glu | Met | Val | Ala | Gln |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Gln | His | Arg | Leu | Arg | Gln | Ile | Gln | Glu | Arg | Leu | His | Thr | Ala | Ala |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Leu Pro Ala | | | | | | | | | | | | | | |

<210> 402
 <211> 1915
 <212> DNA
 <213> Homo sapiens

<400> 402
 ggcaacatgg ctcagcaggc ttgccccaga gccatggcaa agaatggact 50
 tgtaatttgc atcctggtga tcaccttact cctggaccag accaccagcc 100
 acacatccag attaaaagcc aggaagcaca gcaaacgtcg agtgagagac 150
 aaggatggag atctgaagac tcaaattgaa aagctctgga cagaagtcaa 200
 tgccttgaag gaaattcaag ccctgcagac agtctgtctc cgaggcacta 250
 aagttcacia gaaatgctac cttgcttcag aaggtttgaa gcatttccat 300
 gaggccaatg aagactgcat ttccaaagga ggaatcctgg ttatccccag 350
 gaactccgac gaaatcaacg ccctccaaga ctatggtaaa aggagcctgc 400
 caggtgtcaa tgacttttgg ctgggcatca atgacatggt cacggaaggc 450
 aagtttgttg acgtcaacgg aatcgctatc tccttcctca actgggaccg 500
 tgcacagcct aacggtggca agcgagaaaa ctgtgtcctg ttctcccaat 550
 cagctcaggg caagtggagt gatgaggcct gtcgcagcag caagagatac 600
 atatgcgagt tcaccatccc taaataggtc tttctccaat gtgtcctcca 650
 agcaagattc atcataactt ataggttcat gatctctaag atcaagtaaa 700
 aatcataatt ttactttatt aaaaaattgc aacacaagat caatgtccat 750
 agcaatatga tagcatcagc caattttgct aacacatttc tttgggattt 800
 tgccttcctt ggggtatagg ggatcagaaa tattgatcca tgtgcacgca 850
 gataaaatgg cttctgctaa acagactaaa atctttctct ctagtctttc 900

tcacttgtac aaacccagtt tgttttcaaa aaatcacagt agcaatgcaa 950
 ctcatcactc tagaaaagca agcttaggct acctgaaaga ttttcccttg 1000
 gaagtttagc gtatgtttga ctaacaaaaa ttccctacat cagagactct 1050
 aggtgctata taatccaaaa acttttcagc ctgttgctca ttctgtccca 1100
 tgctggcaat aataccttgt cagcccatta cccttatttt gaattgctcc 1150
 atctcctggg gggacttgta tcttgtctgc catatcagaa cacaaacccc 1200
 tgaagagggt ctgatttgat tttttttttt tcttcatgcc tacccttttt 1250
 ttggaagttt ccagccgcaa ttgaaatga aatgacaagg tgtatatttg 1300
 atcaattttc attcccacca ttgcattaca acctctaact taaatgggta 1350
 accctaaggc atatcaaaga agcagattgc atgataaacg gaaatagaaa 1400
 aaaagaacct acatttattt tgcttttagca tccttactct caccttttat 1450
 gagattgaga gtggacttac atttcctttt ttacattttc gtatatttat 1500
 ttttttttagc catcattata tgtttaagtc tattatgggc aaccaatctt 1550
 tggaagctga aaactgaatt taaagaatgc tatcttgga aattgcatac 1600
 gtctgtgcaa ttttttattc tgcctagtgc tattctgctt gtttaactag 1650
 attgtacaaa ataacttcat tgcttaatat caaattacaa agtttagact 1700
 tggagggaaa tgggcttttt agaagcaaac aattttaaat atattttgtt 1750
 cttcaaataa atagtgttta aacattgaat gtgttttgtg aacaatatcc 1800
 cactttgcaa actttaacta cacatgcttg gaattaagtt ttagctgttt 1850
 tcattgctca ataataaagc ctgaattctg atcaataaaa aaaaaaaaaa 1900
 aaaaaaaaaa aaaaa 1915

<210> 403

<211> 206

<212> PRT

<213> Homo sapiens

<400> 403

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Gln | Gln | Ala | Cys | Pro | Arg | Ala | Met | Ala | Lys | Asn | Gly | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| | | | | | | | | | | | | | | |
| Val | Ile | Cys | Ile | Leu | Val | Ile | Thr | Leu | Leu | Leu | Asp | Gln | Thr | Thr |
| | | | | 20 | | | | | 25 | | | | | 30 |
| | | | | | | | | | | | | | | |
| Ser | His | Thr | Ser | Arg | Leu | Lys | Ala | Arg | Lys | His | Ser | Lys | Arg | Arg |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Val | Arg | Asp | Lys | Asp | Gly | Asp | Leu | Lys | Thr | Gln | Ile | Glu | Lys | Leu | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Trp | Thr | Glu | Val | Asn | Ala | Leu | Lys | Glu | Ile | Gln | Ala | Leu | Gln | Thr | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Val | Cys | Leu | Arg | Gly | Thr | Lys | Val | His | Lys | Lys | Cys | Tyr | Leu | Ala | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Ser | Glu | Gly | Leu | Lys | His | Phe | His | Glu | Ala | Asn | Glu | Asp | Cys | Ile | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Ser | Lys | Gly | Gly | Ile | Leu | Val | Ile | Pro | Arg | Asn | Ser | Asp | Glu | Ile | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Asn | Ala | Leu | Gln | Asp | Tyr | Gly | Lys | Arg | Ser | Leu | Pro | Gly | Val | Asn | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Asp | Phe | Trp | Leu | Gly | Ile | Asn | Asp | Met | Val | Thr | Glu | Gly | Lys | Phe | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Val | Asp | Val | Asn | Gly | Ile | Ala | Ile | Ser | Phe | Leu | Asn | Trp | Asp | Arg | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Ala | Gln | Pro | Asn | Gly | Gly | Lys | Arg | Glu | Asn | Cys | Val | Leu | Phe | Ser | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Gln | Ser | Ala | Gln | Gly | Lys | Trp | Ser | Asp | Glu | Ala | Cys | Arg | Ser | Ser | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Lys | Arg | Tyr | Ile | Cys | Glu | Phe | Thr | Ile | Pro | Lys | | | | | |
| | | | | 200 | | | | | 205 | | | | | | |

<210> 404

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 404

cctgggttatc cccaggaact ccgac 25

<210> 405

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 405

ctcttgctgc tgcgacaggc ctc 23

<210> 406

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 406

cgccctccaa gactatggta aaaggagcct gccaggtgtc aatgac 46

<210> 407

<211> 570

<212> DNA

<213> Homo sapiens

<400> 407

gcgaggaccg ggtataagaa gcctcgtggc cttgcccggg cagccgcagg 50
ttccccgcgc gccccgagcc cccgcgccat gaagctcgcc gccctcctgg 100
ggctctgcgt ggccctgtcc tgcagctccg ctgctgcttt cttagtgggc 150
tcggccaagc ctgtggccca gcctgtcgct gcgctggagt cggcggcgga 200
ggccggggcc gggaccctgg ccaaccccct cggcacccctc aaccgctga 250
agctcctgct gagcagcctg ggcatccccg tgaaccacct catagagggc 300
tcccagaagt gtgtggctga gctgggtccc caggccgtgg gggccgtgaa 350
ggccctgaag gccctgctgg gggccctgac agtgtttggc tgagccgaga 400
ctggagcatc tacacctgag gacaagacgc tgcccaccgc cgagggtga 450
aaaccccgcc gcgggggagga ccgtccatcc ccttcccccg gccctctca 500
ataaacgtgg ttaagagcaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 550
aaaaaaaaaa aaaaaaaaaa 570

<210> 408

<211> 104

<212> PRT

<213> Homo sapiens

<400> 408

Met Lys Leu Ala Ala Leu Leu Gly Leu Cys Val Ala Leu Ser Cys
1 5 10 15
Ser Ser Ala Ala Ala Phe Leu Val Gly Ser Ala Lys Pro Val Ala
20 25 30
Gln Pro Val Ala Ala Leu Glu Ser Ala Ala Glu Ala Gly Ala Gly
35 40 45
Thr Leu Ala Asn Pro Leu Gly Thr Leu Asn Pro Leu Lys Leu Leu
50 55 60

Leu Ser Ser Leu Gly Ile Pro Val Asn His Leu Ile Glu Gly Ser
65 70 75

Gln Lys Cys Val Ala Glu Leu Gly Pro Gln Ala Val Gly Ala Val
80 85 90

Lys Ala Leu Lys Ala Leu Leu Gly Ala Leu Thr Val Phe Gly
95 100

<210> 409

<211> 2089

<212> DNA

<213> Homo sapiens

<400> 409

tgaaggactt ttccaggacc caaggccaca cactggaagt cttgcagctg 50
aagggaggca ctcccttgcc tccgcagccg atcacatgaa ggtggtgcc 100
agtctcctgc tctccgtcct cctggcacag gtgtggctgg taccggctt 150
ggccccagt cctcagtcgc cagagacccc agcccctcag aaccagacca 200
gcagggtagt gcaggctccc agggaggaag aggaagatga gcaggaggcc 250
agcgaggaga aggccggtga ggaagagaaa gcctggctga tggccagcag 300
gcagcagctt gccaaaggaga cttcaaactt cggattcagc ctgctgcgaa 350
agatctccat gaggcacgat ggcaacatgg tcttctctcc atttggcatg 400
tccttgGCCa tgacaggctt gatgctgggg gccacagggc cgactgaaac 450
ccagatcaag agagggtccc acttgcaggc cctgaagccc accaagccc 500
ggctcctgcc ttccctcttt aagggactca gagagaccct ctcccgaac 550
ctggaactgg gcctctcaca ggggagtttt gccttcatcc acaaggattt 600
tgatgtcaaa gagactttct tcaatttatc caagaggtat tttgatacag 650
agtgcgtgcc tatgaatttt cgcaatgcct cacaggccaa aaggctcatg 700
aatcattaca ttaacaaaga gactcggggg aaaattccca aactgtttga 750
tgagattaat cctgaaacca aattaattct tgtggattac atcttgttca 800
aagggaaatg gttgacccca tttgaccctg tcttcaccga agtcgacact 850
ttccacctgg acaagtacaa gaccattaag gtgcccatga tgtacggtgc 900
aggcaagttt gcctccacct ttgacaagaa ttttcgttgt catgtcctca 950
aactgcccta ccaaggaaat gccaccatgc tgggtggcct catggagaaa 1000
atgggtgacc acctcgccct tgaagactac ctgaccacag acttggtgga 1050

gacatggctc agaaacatga aaaccagaaa catggaagtt ttctttccga 1100
agttcaagct agatcagaag tatgagatgc atgagctgct taggcagatg 1150
ggaatcagaa gaatcttctc accctttgct gaccttagtg aactctcagc 1200
tactggaaga aatctccaag tatccagggt tttacgaaga acagtgattg 1250
aagttgatga aaggggcact gaggcagtgg caggaatctt gtcagaaatt 1300
actgcttatt ccatgcctcc tgtcatcaaa gtggaccggc catttcattt 1350
catgatctat gaagaaacct ctggaatgct tctgtttctg ggcaggggtg 1400
tgaatccgac tctcctataa ttcaggacat gcataagcac ttcgtgctgt 1450
agtagatgct gaatctgagg tatcaaacac acacaggata ccagcaatgg 1500
atggcagggg agagtgttcc ttttgttctt aactagttta ggggtgttctc 1550
aaataaatac agtagtcccc acttatctga gggggatata ttcaaagacc 1600
cccagcagat gcctgaaacg gtggacagtg ctgaacctta tatatatttt 1650
ttcctacaca tacataccta tgataaagtt taatttataa attaggcaca 1700
gtaagagatt aacaataata acaacattaa gtaaaatgag ttacttgaac 1750
gcaagcactg caataccata acagtcaaac tgattataga gaaggctact 1800
aagtgactca tgggcgagga gcatagacag tgtggagaca ttgggcaagg 1850
ggagaattca catcctgggt gggacagagc aggacgatgc aagattccat 1900
cccactactc agaatggcat gctgcttaag acttttagat tgtttatttc 1950
tggaattttt catttaatgt ttttggacca tggttgacca tggttaactg 2000
agactgcaga aagcaaaacc atggataagg gaggactact acaaaagcat 2050
taaattgata catatttttt aaaaaaaaaa aaaaaaaaaa 2089

<210> 410

<211> 444

<212> PRT

<213> Homo sapiens

<400> 410

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Val | Val | Pro | Ser | Leu | Leu | Leu | Ser | Val | Leu | Leu | Ala | Gln |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Val | Trp | Leu | Val | Pro | Gly | Leu | Ala | Pro | Ser | Pro | Gln | Ser | Pro | Glu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Thr | Pro | Ala | Pro | Gln | Asn | Gln | Thr | Ser | Arg | Val | Val | Gln | Ala | Pro |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Glu | Glu | Glu | Glu | Asp | Glu | Gln | Glu | Ala | Ser | Glu | Glu | Lys | Ala | 50 | 55 | 60 |
| Gly | Glu | Glu | Glu | Lys | Ala | Trp | Leu | Met | Ala | Ser | Arg | Gln | Gln | Leu | 65 | 70 | 75 |
| Ala | Lys | Glu | Thr | Ser | Asn | Phe | Gly | Phe | Ser | Leu | Leu | Arg | Lys | Ile | 80 | 85 | 90 |
| Ser | Met | Arg | His | Asp | Gly | Asn | Met | Val | Phe | Ser | Pro | Phe | Gly | Met | 95 | 100 | 105 |
| Ser | Leu | Ala | Met | Thr | Gly | Leu | Met | Leu | Gly | Ala | Thr | Gly | Pro | Thr | 110 | 115 | 120 |
| Glu | Thr | Gln | Ile | Lys | Arg | Gly | Leu | His | Leu | Gln | Ala | Leu | Lys | Pro | 125 | 130 | 135 |
| Thr | Lys | Pro | Gly | Leu | Leu | Pro | Ser | Leu | Phe | Lys | Gly | Leu | Arg | Glu | 140 | 145 | 150 |
| Thr | Leu | Ser | Arg | Asn | Leu | Glu | Leu | Gly | Leu | Ser | Gln | Gly | Ser | Phe | 155 | 160 | 165 |
| Ala | Phe | Ile | His | Lys | Asp | Phe | Asp | Val | Lys | Glu | Thr | Phe | Phe | Asn | 170 | 175 | 180 |
| Leu | Ser | Lys | Arg | Tyr | Phe | Asp | Thr | Glu | Cys | Val | Pro | Met | Asn | Phe | 185 | 190 | 195 |
| Arg | Asn | Ala | Ser | Gln | Ala | Lys | Arg | Leu | Met | Asn | His | Tyr | Ile | Asn | 200 | 205 | 210 |
| Lys | Glu | Thr | Arg | Gly | Lys | Ile | Pro | Lys | Leu | Phe | Asp | Glu | Ile | Asn | 215 | 220 | 225 |
| Pro | Glu | Thr | Lys | Leu | Ile | Leu | Val | Asp | Tyr | Ile | Leu | Phe | Lys | Gly | 230 | 235 | 240 |
| Lys | Trp | Leu | Thr | Pro | Phe | Asp | Pro | Val | Phe | Thr | Glu | Val | Asp | Thr | 245 | 250 | 255 |
| Phe | His | Leu | Asp | Lys | Tyr | Lys | Thr | Ile | Lys | Val | Pro | Met | Met | Tyr | 260 | 265 | 270 |
| Gly | Ala | Gly | Lys | Phe | Ala | Ser | Thr | Phe | Asp | Lys | Asn | Phe | Arg | Cys | 275 | 280 | 285 |
| His | Val | Leu | Lys | Leu | Pro | Tyr | Gln | Gly | Asn | Ala | Thr | Met | Leu | Val | 290 | 295 | 300 |
| Val | Leu | Met | Glu | Lys | Met | Gly | Asp | His | Leu | Ala | Leu | Glu | Asp | Tyr | 305 | 310 | 315 |
| Leu | Thr | Thr | Asp | Leu | Val | Glu | Thr | Trp | Leu | Arg | Asn | Met | Lys | Thr | 320 | 325 | 330 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Asn | Met | Glu | Val | Phe | Phe | Pro | Lys | Phe | Lys | Leu | Asp | Gln | Lys | 335 | 340 | 345 |
| Tyr | Glu | Met | His | Glu | Leu | Leu | Arg | Gln | Met | Gly | Ile | Arg | Arg | Ile | 350 | 355 | 360 |
| Phe | Ser | Pro | Phe | Ala | Asp | Leu | Ser | Glu | Leu | Ser | Ala | Thr | Gly | Arg | 365 | 370 | 375 |
| Asn | Leu | Gln | Val | Ser | Arg | Val | Leu | Arg | Arg | Thr | Val | Ile | Glu | Val | 380 | 385 | 390 |
| Asp | Glu | Arg | Gly | Thr | Glu | Ala | Val | Ala | Gly | Ile | Leu | Ser | Glu | Ile | 395 | 400 | 405 |
| Thr | Ala | Tyr | Ser | Met | Pro | Pro | Val | Ile | Lys | Val | Asp | Arg | Pro | Phe | 410 | 415 | 420 |
| His | Phe | Met | Ile | Tyr | Glu | Glu | Thr | Ser | Gly | Met | Leu | Leu | Phe | Leu | 425 | 430 | 435 |
| Gly | Arg | Val | Val | Asn | Pro | Thr | Leu | Leu | | | | | | | 440 | | |

<210> 411
 <211> 636
 <212> DNA
 <213> Homo sapiens

<400> 411
 ctgggatcag ccactgcagc tccctgagca ctctctacag agacgcggac 50
 ccagacatg aggaggctcc tcctgggtcac cagcctgggtg gttgtgctgc 100
 tgtgggaggc aggtgcagtc ccagcaccca aggtccctat caagatgcaa 150
 gtcaaact ggcctcaga gcaggacca gagaaggcct ggggcgccc 200
 tgtggtggag cctccggaga aggacgacca gctggtgggtg ctgttcctg 250
 tccagaagcc gaaactcttg accaccgagg agaagccacg aggtcagggc 300
 aggggccccca tccttcagc caccaaggcc tggatggaga ccgaggacac 350
 cctgggccgt gtcctgagtc ccgagcccga ccatgacagc ctgtaccacc 400
 ctccgcctga ggaggaccag ggcgaggaga ggccccggtt gtgggtgatg 450
 ccaaatcacc aggtgctcct gggaccggag gaagaccaag accacatcta 500
 ccacccccag tagggtcca ggggccatca ctgccccgc cctgtcccaa 550
 ggcccaggct gttgggactg ggaccctccc taccctgccc cagctagaca 600
 aataaacccc agcaggcaaa aaaaaaaaaa aaaaaa 636

<210> 412

<211> 151
 <212> PRT
 <213> Homo sapiens

<400> 412
 Met Arg Arg Leu Leu Leu Val Thr Ser Leu Val Val Val Leu Leu
 1 5 10 15
 Trp Glu Ala Gly Ala Val Pro Ala Pro Lys Val Pro Ile Lys Met
 20 25 30
 Gln Val Lys His Trp Pro Ser Glu Gln Asp Pro Glu Lys Ala Trp
 35 40 45
 Gly Ala Arg Val Val Glu Pro Pro Glu Lys Asp Asp Gln Leu Val
 50 55 60
 Val Leu Phe Pro Val Gln Lys Pro Lys Leu Leu Thr Thr Glu Glu
 65 70 75
 Lys Pro Arg Gly Gln Gly Arg Gly Pro Ile Leu Pro Gly Thr Lys
 80 85 90
 Ala Trp Met Glu Thr Glu Asp Thr Leu Gly Arg Val Leu Ser Pro
 95 100 105
 Glu Pro Asp His Asp Ser Leu Tyr His Pro Pro Pro Glu Glu Asp
 110 115 120
 Gln Gly Glu Glu Arg Pro Arg Leu Trp Val Met Pro Asn His Gln
 125 130 135
 Val Leu Leu Gly Pro Glu Glu Asp Gln Asp His Ile Tyr His Pro
 140 145 150
 Gln

<210> 413
 <211> 1176
 <212> DNA
 <213> Homo sapiens

<400> 413
 agaaagctgc actctgttga gctccagggc gcagtggagg gagggagtga 50
 aggagctctc tgtacccaag gaaagtgcag ctgagactca gacaagatta 100
 caatgaacca actcagcttc ctgctgtttc tcatagcgac caccagagga 150
 tggagtacag atgaggctaa tacttacttc aaggaatgga cctgttcttc 200
 gtctccatct ctgcccagaa gctgcaagga aatcaaagac gaatgtccta 250
 gtgcatttga tggcctgtat tttctccgca ctgagaatgg tgttatctac 300
 cagaccttct gtgacatgac ctctgggggt ggcggctgga ccctgggtggc 350

cagcgtgcat gagaatgaca tgcgtgggaa gtgcacggtg ggcgatcgct 400
ggtccagtca gcagggcagc aaagcagact acccagaggg ggacggcaac 450
tgggccaact acaacacctt tggatctgca gaggcggcca cgagcgatga 500
ctacaagaac cctggctact acgacatcca ggccaaggac ctgggcatct 550
ggcacgtgcc caataagtcc cccatgcagc actggagaaa cagctccctg 600
ctgaggtacc gcacggacac tggcttcctc cagacactgg gacataatct 650
gtttggcatc taccagaaat atccagtga atatggagaa ggaaagtgtt 700
ggactgacaa cggcccgggtg atccctgtgg tctatgattt tggcgacgcc 750
cagaaaacag catcttatta ctcaccctat ggccagcggg aattcactgc 800
gggatttggt cagttcaggg tatttaataa cgagagagca gccaacgcct 850
tgtgtgctgg aatgaggggtc accggatgta acactgagca tcaactgcatt 900
ggtggaggag gatactttcc agaggccagt cccagcagt gtggagattt 950
ttctggtttt gattggagtg gatatggaac tcatgttggt tacagcagca 1000
gccgtgagat aactgaggca gctgtgcttc tattctatcg ttgagagttt 1050
tgtgggaggg aaccagacc tctcctcca accatgagat cccaaggatg 1100
gagaacaact taccagtag ctagaatgtt aatggcagaa gagaaaacaa 1150
taaatcatat tgactcaaga aaaaaa 1176

<210> 414
<211> 313
<212> PRT
<213> Homo sapiens

<400> 414
Met Asn Gln Leu Ser Phe Leu Leu Phe Leu Ile Ala Thr Thr Arg
1 5 10 15
Gly Trp Ser Thr Asp Glu Ala Asn Thr Tyr Phe Lys Glu Trp Thr
20 25 30
Cys Ser Ser Ser Pro Ser Leu Pro Arg Ser Cys Lys Glu Ile Lys
35 40 45
Asp Glu Cys Pro Ser Ala Phe Asp Gly Leu Tyr Phe Leu Arg Thr
50 55 60
Glu Asn Gly Val Ile Tyr Gln Thr Phe Cys Asp Met Thr Ser Gly
65 70 75
Gly Gly Gly Trp Thr Leu Val Ala Ser Val His Glu Asn Asp Met

| 80 | | | | | | | | | | 85 | | | | | 90 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Arg | Gly | Lys | Cys | Thr | Val | Gly | Asp | Arg | Trp | Ser | Ser | Gln | Gln | Gly | | | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | | | |
| Ser | Lys | Ala | Asp | Tyr | Pro | Glu | Gly | Asp | Gly | Asn | Trp | Ala | Asn | Tyr | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Asn | Thr | Phe | Gly | Ser | Ala | Glu | Ala | Ala | Thr | Ser | Asp | Asp | Tyr | Lys | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Asn | Pro | Gly | Tyr | Tyr | Asp | Ile | Gln | Ala | Lys | Asp | Leu | Gly | Ile | Trp | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| His | Val | Pro | Asn | Lys | Ser | Pro | Met | Gln | His | Trp | Arg | Asn | Ser | Ser | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Leu | Leu | Arg | Tyr | Arg | Thr | Asp | Thr | Gly | Phe | Leu | Gln | Thr | Leu | Gly | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| His | Asn | Leu | Phe | Gly | Ile | Tyr | Gln | Lys | Tyr | Pro | Val | Lys | Tyr | Gly | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Glu | Gly | Lys | Cys | Trp | Thr | Asp | Asn | Gly | Pro | Val | Ile | Pro | Val | Val | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Tyr | Asp | Phe | Gly | Asp | Ala | Gln | Lys | Thr | Ala | Ser | Tyr | Tyr | Ser | Pro | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Tyr | Gly | Gln | Arg | Glu | Phe | Thr | Ala | Gly | Phe | Val | Gln | Phe | Arg | Val | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Phe | Asn | Asn | Glu | Arg | Ala | Ala | Asn | Ala | Leu | Cys | Ala | Gly | Met | Arg | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Val | Thr | Gly | Cys | Asn | Thr | Glu | His | His | Cys | Ile | Gly | Gly | Gly | Gly | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Tyr | Phe | Pro | Glu | Ala | Ser | Pro | Gln | Gln | Cys | Gly | Asp | Phe | Ser | Gly | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Phe | Asp | Trp | Ser | Gly | Tyr | Gly | Thr | His | Val | Gly | Tyr | Ser | Ser | Ser | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Arg | Glu | Ile | Thr | Glu | Ala | Ala | Val | Leu | Leu | Phe | Tyr | Arg | | | | | | | |
| | | | | 305 | | | | | 310 | | | | | | | | | | |

<210> 415

<211> 1281

<212> DNA

<213> Homo sapiens

<400> 415

gcggagccgg cgccggctgc gcagaggagc cgctctcgcc gccgccacct 50

cggctggggag cccacgagggc tgccgcatcc tgccctcgga acaatgggac 100

tcggcgcgcg aggtgcttgg gccgcgctgc tcctggggac gctgcaggtg 150
 ctagecgtgc tggggggccgc ccatgaaagc gcagccatgg cggcatctgc 200
 aaacatagag aattctgggc ttccacacaa ctccagtgt aactcaacag 250
 agactctcca acatgtgcct tctgaccata caaatgaaac ttccaacagt 300
 actgtgaaac caccaacttc agttgcctca gactccagta atacaacggt 350
 caccaccatg aaacctacag cggcatctaa tacaacaaca ccagggatgg 400
 tctcaacaaa tatgacttct accaccttaa agtctacacc caaaacaaca 450
 agtgtttcac agaacacatc tcagatatca acatccacaa tgaccgtaac 500
 ccacaatagt tcagtgcacat ctgctgcttc atcagtaaca atcacaacaa 550
 ctatgcattc tgaagcaaag aaaggatcaa aatttgatac tgggagcttt 600
 gttggtggta ttgtattaac gctgggagtt ttatctattc tttacattgg 650
 atgcaaaatg tattactcaa gaagaggcat tcggtatcga accatagatg 700
 aacatgatgc catcatttaa ggaaatccat ggaccaagga tggaatacag 750
 attgatgctg ccctatcaat taattttggt ttattaatag tttaaaacaa 800
 tattctcttt ttgaaaatag tataaacagg ccatgcatat aatgtacagt 850
 gtattacgta aatatgtaaa gattcttcaa ggtaacaagg gtttgggttt 900
 tgaaataaac atctggatct tatagaccgt tcatacaatg gtttttagcaa 950
 gttcatagta agacaaacaa gtcctatctt ttttttttgg ctgggggtggg 1000
 ggcattggtc acatatgacc agtaattgaa agacgtcatc actgaaagac 1050
 agaatgccat ctgggcatac aaataagaag tttgtcacag cactcaggat 1100
 tttgggtatc ttttgtagct cacataaaga acttcagtgc ttttcagagc 1150
 tggatatatc ttaattacta atgccacaca gaaattatac aatcaaaacta 1200
 gatctgaagc ataatttaag aaaaacatca acattttttg tgcttttaaac 1250
 tgtagtagtt ggtctagaaa caaaatactc c 1281

<210> 416

<211> 208

<212> PRT

<213> Homo sapiens

<400> 416

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Leu | Gly | Ala | Arg | Gly | Ala | Trp | Ala | Ala | Leu | Leu | Leu | Gly |
| 1 | | | | 5 | | | | 10 | | | | | | 15 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Thr | Leu | Gln | Val | Leu | Ala | Leu | Leu | Gly | Ala | Ala | His | Glu | Ser | Ala | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Ala | Met | Ala | Ala | Ser | Ala | Asn | Ile | Glu | Asn | Ser | Gly | Leu | Pro | His | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Asn | Ser | Ser | Ala | Asn | Ser | Thr | Glu | Thr | Leu | Gln | His | Val | Pro | Ser | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Asp | His | Thr | Asn | Glu | Thr | Ser | Asn | Ser | Thr | Val | Lys | Pro | Pro | Thr | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Ser | Val | Ala | Ser | Asp | Ser | Ser | Asn | Thr | Thr | Val | Thr | Thr | Met | Lys | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Pro | Thr | Ala | Ala | Ser | Asn | Thr | Thr | Thr | Pro | Gly | Met | Val | Ser | Thr | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Asn | Met | Thr | Ser | Thr | Thr | Leu | Lys | Ser | Thr | Pro | Lys | Thr | Thr | Ser | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Val | Ser | Gln | Asn | Thr | Ser | Gln | Ile | Ser | Thr | Ser | Thr | Met | Thr | Val | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Thr | His | Asn | Ser | Ser | Val | Thr | Ser | Ala | Ala | Ser | Ser | Val | Thr | Ile | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Thr | Thr | Thr | Met | His | Ser | Glu | Ala | Lys | Lys | Gly | Ser | Lys | Phe | Asp | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Thr | Gly | Ser | Phe | Val | Gly | Gly | Ile | Val | Leu | Thr | Leu | Gly | Val | Leu | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Ser | Ile | Leu | Tyr | Ile | Gly | Cys | Lys | Met | Tyr | Tyr | Ser | Arg | Arg | Gly | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ile | Arg | Tyr | Arg | Thr | Ile | Asp | Glu | His | Asp | Ala | Ile | Ile | | | |
| | | | | 200 | | | | | 205 | | | | | | |

<210> 417
 <211> 1728
 <212> DNA
 <213> Homo sapiens

<400> 417
 cagccggggtc ccaagcctgt gcctgagcct gagcctgagc ctgagcccga 50
 gccggggagcc ggtcgcgggg gctccgggct gtgggaccgc tgggccccca 100
 gcgatggcga ccctgtgggg aggccttctt cggcttggtc ccttgctcag 150
 cctgtcgtgc ctggcgcttt ccgtgctget gctggcgag ctgtcagacg 200
 ccgccaagaa ttctgaggat gtcagatgta aatgtatctg ccctccctat 250
 aaagaaaatt ctgggcatat ttataataag aacatatctc agaaagattg 300

tgattgcctt catgttgtgg agcccatgcc tgtgcggggg cctgatgtag 350
aagcatactg tctacgctgt gaatgcaaat atgaagaaag aagctctgtc 400
acaatcaagg ttaccattat aatttatctc tccatttttg gccttctact 450
tctgtacatg gtatatctta ctctggttga gcccatactg aagaggcgcc 500
tctttggaca tgcacagttg atacagagtg atgatgatat tggggatcac 550
cagccttttg caaatgcaca cgatgtgcta gcccgctccc gcagtcgagc 600
caacgtgctg aacaaggtag aatatgcaca gcagcgctgg aagcttcaag 650
tccaagagca gcgaaagtct gtctttgacc ggcatgttgt cctcagctaa 700
ttgggaattg aattcaaggt gactagaaag aaacaggcag acaactggaa 750
agaactgact gggttttgct gggtttcatt ttaatacctt gttgatttca 800
ccaactgttg ctggaagatt caaaactgga agcaaaaact tgcttgattt 850
ttttttcttg ttaacgtaat aatagagaca tttttaaaag cacacagctc 900
aaagtcagcc aataagtctt ttcctatttg tgacttttac taataaaaat 950
aaatctgcct gtaaattatc ttgaagtcct ttacctggaa caagcactct 1000
ctttttcacc acatagtttt aacttgactt tcaagataat tttcagggtt 1050
tttggtgttg ttgttttttg tttgtttgtt ttggtgggag aggggagggg 1100
tgcttgggaa gtgggtaaca acttttttca agtcacttta ctaaacaac 1150
ttttgtaaag agaccttacc ttctattttc gagtttcatt tatattttgc 1200
agtgtagcca gcctcatcaa agagctgact tactcatttg acttttgcac 1250
tgactgtatt atctgggtat ctgctgtgtc tgcacttcat ggtaaacggg 1300
atctaaaatg cctggtggct tttcacaaa agcagatttt cttcatgtac 1350
tgtgatgtct gatgcaatgc atcctagaac aaactggcca tttgctagtt 1400
tactctaaag actaaacata gtcttgggtg gtgtggtctt actcatcttc 1450
tagtaccttt aaggacaaat cctaaggact tggacacttg caataaagaa 1500
attttatttt aaaccaagc ctccctggat tgataatata tacacatttg 1550
tcagcatttc cggtcgtggg gagaggcagc tgtttgagct ccaatatgtg 1600
cagctttgaa ctagggctgg ggttggtggg gcctcttctg aaaggctctaa 1650
ccattattgg ataactggct tttttcttcc tatgtcctct ttggaatgta 1700
acaataaaaa taatttttga aacatcaa 1728

<210> 418
 <211> 198
 <212> PRT
 <213> Homo sapiens

<400> 418
 Met Ala Thr Leu Trp Gly Gly Leu Leu Arg Leu Gly Ser Leu Leu
 1 5 10 15
 Ser Leu Ser Cys Leu Ala Leu Ser Val Leu Leu Leu Ala Gln Leu
 20 25 30
 Ser Asp Ala Ala Lys Asn Phe Glu Asp Val Arg Cys Lys Cys Ile
 35 40 45
 Cys Pro Pro Tyr Lys Glu Asn Ser Gly His Ile Tyr Asn Lys Asn
 50 55 60
 Ile Ser Gln Lys Asp Cys Asp Cys Leu His Val Val Glu Pro Met
 65 70 75
 Pro Val Arg Gly Pro Asp Val Glu Ala Tyr Cys Leu Arg Cys Glu
 80 85 90
 Cys Lys Tyr Glu Glu Arg Ser Ser Val Thr Ile Lys Val Thr Ile
 95 100 105
 Ile Ile Tyr Leu Ser Ile Leu Gly Leu Leu Leu Tyr Met Val
 110 115 120
 Tyr Leu Thr Leu Val Glu Pro Ile Leu Lys Arg Arg Leu Phe Gly
 125 130 135
 His Ala Gln Leu Ile Gln Ser Asp Asp Asp Ile Gly Asp His Gln
 140 145 150
 Pro Phe Ala Asn Ala His Asp Val Leu Ala Arg Ser Arg Ser Arg
 155 160 165
 Ala Asn Val Leu Asn Lys Val Glu Tyr Ala Gln Gln Arg Trp Lys
 170 175 180
 Leu Gln Val Gln Glu Gln Arg Lys Ser Val Phe Asp Arg His Val
 185 190 195
 Val Leu Ser

<210> 419
 <211> 681
 <212> DNA
 <213> Homo sapiens

<400> 419
 gcacctgcga ccaccgtgag cagtcatggc gtactccaca gtgcagagag 50

tcgctctggc ttctgggctt gtctggctc tgtcgctgct gctgcccag 100
 gccttcctgt cccgcgggaa gcggcaggag ccgcccga cacctgaagg 150
 aaaattgggc cgatttccac ctatgatgca tcatcaccag gcaccctcag 200
 atggccagac tcctggggct cgtttccaga ggtctcacct tgccgaggca 250
 tttgcaaagg ccaaaggatc aggtggaggt gctggaggag gaggtagtgg 300
 aagaggtctg atggggcaga ttattccaat ctacggtttt gggatttttt 350
 tatatatact gtacattcta tttaaggtaa gtagaatcat cctaatacata 400
 ttacatcaat gaaaatctaa tatggcgata aaaatcattg tctacattaa 450
 aacttcttat agttcataaa attatttcaa atccatcatc tctttaaatc 500
 ctgcctctc ttcatgaggt acttaggata gccattattt cagtttcaca 550
 taagaatgtt tactcaatgt ttaagtgtt tgccccaaaa ttcacaacta 600
 acaaggcaga actaggactt gaacatggat cttttggttc ttaatccagt 650
 gagtgataca attcaatgca ctcccctgcc a 681

<210> 420

<211> 128

<212> PRT

<213> Homo sapiens

<400> 420

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Tyr | Ser | Thr | Val | Gln | Arg | Val | Ala | Leu | Ala | Ser | Gly | Leu |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |
| Val | Leu | Ala | Leu | Ser | Leu | Leu | Leu | Pro | Lys | Ala | Phe | Leu | Ser | Arg |
| | | | 20 | | | | | | 25 | | | | 30 | |
| Gly | Lys | Arg | Gln | Glu | Pro | Pro | Pro | Thr | Pro | Glu | Gly | Lys | Leu | Gly |
| | | | 35 | | | | | | 40 | | | | 45 | |
| Arg | Phe | Pro | Pro | Met | Met | His | His | His | Gln | Ala | Pro | Ser | Asp | Gly |
| | | | 50 | | | | | | 55 | | | | 60 | |
| Gln | Thr | Pro | Gly | Ala | Arg | Phe | Gln | Arg | Ser | His | Leu | Ala | Glu | Ala |
| | | | 65 | | | | | | 70 | | | | 75 | |
| Phe | Ala | Lys | Ala | Lys | Gly | Ser | Gly | Gly | Gly | Ala | Gly | Gly | Gly | Gly |
| | | | 80 | | | | | | 85 | | | | 90 | |
| Ser | Gly | Arg | Gly | Leu | Met | Gly | Gln | Ile | Ile | Pro | Ile | Tyr | Gly | Phe |
| | | | 95 | | | | | | 100 | | | | 105 | |
| Gly | Ile | Phe | Leu | Tyr | Ile | Leu | Tyr | Ile | Leu | Phe | Lys | Val | Ser | Arg |
| | | | 110 | | | | | | 115 | | | | 120 | |
| Ile | Ile | Leu | Ile | Ile | Leu | His | Gln | | | | | | | |

<210> 421
 <211> 1630
 <212> DNA
 <213> Homo sapiens

<400> 421
 cggctcgagt gcagctgtgg ggagatttca gtgcattgcc tcccctgggt 50
 gctcttcac ttggatttga aagttgagag cagcatgttt tgcccactga 100
 aactcatcct gctgccagtg ttactggatt attccttggg cctgaatgac 150
 ttgaatgttt ccccgctga gctaacagtc catgtgggtg attcagctct 200
 gatgggatgt gttttccaga gcacagaaga caaatgtata ttcaagatag 250
 actggactct gtcaccagga gagcacgcca aggacgaata tgtgctatac 300
 tattactcca atctcagtgt gcctattggg cgcttccaga accgcgtaca 350
 cttgatgggg gacatcttat gcaatgatgg ctctctcctg ctccaagatg 400
 tgcaagaggg tgaccagggg acctatatct gtgaaatccg cctcaaaggg 450
 gagagccagg tgttcaagaa ggcggtggta ctgcatgtgc ttccagagga 500
 gcccaaagag ctcatgggtcc atgtgggtgg attgattcag atgggatgtg 550
 ttttccagag cacagaagtg aaacacgtga ccaaggtaga atgggatattt 600
 tcaggacggc gcgcaaagga ggagattgta tttcgttact accacaaact 650
 caggatgtct gtggagtact ccagagctg gggccacttc cagaatcgtg 700
 tgaacctggg gggggacatt ttccgcaatg acggttccat catgcttcaa 750
 ggagtgaggg agtcagatgg aggaaactac acctgcagta tccacctagg 800
 gaacctgggt ttcaagaaaa ccattgtgct gcatgtcagc ccggaagagc 850
 ctggaacact ggtgaccccg gcagccctga ggctcttggg cttgggtggg 900
 aatcagttgg tgatcattgt ggaattgtc tgtgccacaa tctgctgct 950
 ccctgttctg atattgatcg tgaagaagac ctgtggaaat aagagttcag 1000
 tgaattctac agtcttgggtg aagaacacga agaagactaa tccagagata 1050
 aaagaaaaac cctgccattt tgaaagatgt gaaggggaga aacacattta 1100
 ctccccaata attgtacggg aggtgatcga ggaagaagaa ccaagtgaag 1150
 aatcagaggg cacctacatg accatgcacc cagtttggcc ttctctgagg 1200
 tcagatcgga acaactcact tgaaaaaag tcaggtgggg gaatgccaaa 1250

aacacagcaa gccttttgag aagaatggag agtcccttca tctcagcagc 1300
 ggtggagact ctctcctgtg tgtgtcctgg gccactctac cagtgatttc 1350
 agactcccg c tctccagct gtcctcctgt ctcattgttt ggtcaataca 1400
 ctgaagatgg agaatttgga gcctggcaga gagactggac agctctggag 1450
 gaacaggcct gctgagggga ggggagcatg gacttggcct ctggagtggg 1500
 aactggccc tgggaaccag gctgagctga gtggcctcaa accccccgtt 1550
 ggatcagacc ctctgtggg cagggttctt agtggatgag ttactgggaa 1600
 gaatcagaga taaaaccaa cccaaatcaa 1630

<210> 422

<211> 394

<212> PRT

<213> Homo sapiens

<400> 422

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Phe | Cys | Pro | Leu | Lys | Leu | Ile | Leu | Leu | Pro | Val | Leu | Leu | Asp |
| 1 | | | | 5 | | | | 10 | | | | | | 15 |
| Tyr | Ser | Leu | Gly | Leu | Asn | Asp | Leu | Asn | Val | Ser | Pro | Pro | Glu | Leu |
| | | | | 20 | | | | 25 | | | | | | 30 |
| Thr | Val | His | Val | Gly | Asp | Ser | Ala | Leu | Met | Gly | Cys | Val | Phe | Gln |
| | | | | 35 | | | | 40 | | | | | | 45 |
| Ser | Thr | Glu | Asp | Lys | Cys | Ile | Phe | Lys | Ile | Asp | Trp | Thr | Leu | Ser |
| | | | | 50 | | | | 55 | | | | | | 60 |
| Pro | Gly | Glu | His | Ala | Lys | Asp | Glu | Tyr | Val | Leu | Tyr | Tyr | Tyr | Ser |
| | | | | 65 | | | | 70 | | | | | | 75 |
| Asn | Leu | Ser | Val | Pro | Ile | Gly | Arg | Phe | Gln | Asn | Arg | Val | His | Leu |
| | | | | 80 | | | | 85 | | | | | | 90 |
| Met | Gly | Asp | Ile | Leu | Cys | Asn | Asp | Gly | Ser | Leu | Leu | Leu | Gln | Asp |
| | | | | 95 | | | | 100 | | | | | | 105 |
| Val | Gln | Glu | Ala | Asp | Gln | Gly | Thr | Tyr | Ile | Cys | Glu | Ile | Arg | Leu |
| | | | | 110 | | | | 115 | | | | | | 120 |
| Lys | Gly | Glu | Ser | Gln | Val | Phe | Lys | Lys | Ala | Val | Val | Leu | His | Val |
| | | | | 125 | | | | 130 | | | | | | 135 |
| Leu | Pro | Glu | Glu | Pro | Lys | Glu | Leu | Met | Val | His | Val | Gly | Gly | Leu |
| | | | | 140 | | | | 145 | | | | | | 150 |
| Ile | Gln | Met | Gly | Cys | Val | Phe | Gln | Ser | Thr | Glu | Val | Lys | His | Val |
| | | | | 155 | | | | 160 | | | | | | 165 |
| Thr | Lys | Val | Glu | Trp | Ile | Phe | Ser | Gly | Arg | Arg | Ala | Lys | Glu | Glu |

| 170 | | | | | | | | | | 175 | | | | | 180 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Ile | Val | Phe | Arg | Tyr | Tyr | His | Lys | Leu | Arg | Met | Ser | Val | Glu | Tyr | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Ser | Gln | Ser | Trp | Gly | His | Phe | Gln | Asn | Arg | Val | Asn | Leu | Val | Gly | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Asp | Ile | Phe | Arg | Asn | Asp | Gly | Ser | Ile | Met | Leu | Gln | Gly | Val | Arg | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Glu | Ser | Asp | Gly | Gly | Asn | Tyr | Thr | Cys | Ser | Ile | His | Leu | Gly | Asn | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Leu | Val | Phe | Lys | Lys | Thr | Ile | Val | Leu | His | Val | Ser | Pro | Glu | Glu | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Pro | Arg | Thr | Leu | Val | Thr | Pro | Ala | Ala | Leu | Arg | Pro | Leu | Val | Leu | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Gly | Gly | Asn | Gln | Leu | Val | Ile | Ile | Val | Gly | Ile | Val | Cys | Ala | Thr | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Ile | Leu | Leu | Leu | Pro | Val | Leu | Ile | Leu | Ile | Val | Lys | Lys | Thr | Cys | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Gly | Asn | Lys | Ser | Ser | Val | Asn | Ser | Thr | Val | Leu | Val | Lys | Asn | Thr | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| Lys | Lys | Thr | Asn | Pro | Glu | Ile | Lys | Glu | Lys | Pro | Cys | His | Phe | Glu | | | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | | | |
| Arg | Cys | Glu | Gly | Glu | Lys | His | Ile | Tyr | Ser | Pro | Ile | Ile | Val | Arg | | | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | | | |
| Glu | Val | Ile | Glu | Glu | Glu | Glu | Pro | Ser | Glu | Lys | Ser | Glu | Ala | Thr | | | | | |
| | | | | 350 | | | | | 355 | | | | | 360 | | | | | |
| Tyr | Met | Thr | Met | His | Pro | Val | Trp | Pro | Ser | Leu | Arg | Ser | Asp | Arg | | | | | |
| | | | | 365 | | | | | 370 | | | | | 375 | | | | | |
| Asn | Asn | Ser | Leu | Glu | Lys | Lys | Ser | Gly | Gly | Gly | Met | Pro | Lys | Thr | | | | | |
| | | | | 380 | | | | | 385 | | | | | 390 | | | | | |

Gln Gln Ala Phe

<210> 423

<211> 963

<212> DNA

<213> Homo sapiens

<400> 423

ctatgaagaa gcttcctgga aaacaataag caaaggaaaa caaatgtgtc 50

ccatctcaca tggttctacc ctactaaaga caggaagatc ataaactgac 100

agataactgaa attgtaagag ttggaaacta cattttgcaa agtcattgaa 150
 ctctgagctc agttgcagta ctcggaagc catgcaggat gaagatggat 200
 acatcacctt aaatattaaa actcggaac cagctctcgt ctccgttggc 250
 cctgcaccc cctcctggtg gcgtgtgatg gctttgattc tgctgaccc 300
 gtgcgtgggg atggttgctg ggctggtggc tctggggatt tggctctgtca 350
 tgcagcgcaa ttacctaca gatgagaatg aaaatcgac aggaactctg 400
 caacaattag caaagcgctt ctgtcaatat gtggtaaaac aatcagaact 450
 aaagggcact ttcaaaggtc ataaatgcag cccctgtgac acaaactgga 500
 gatattatgg agatagctgc tatgggttct tcaggcacia cttaacatgg 550
 gaagagagta agcagtactg cactgacatg aatgctactc tcctgaagat 600
 tgacaaccgg aacattgtgg agtacatcaa agccaggact catttaattc 650
 gttgggtcgg attatctcgc cagaagtcga atgaggtctg gaagtgggag 700
 gatggctcgg ttatctcaga aaatatgttt gagtttttgg aagatggaaa 750
 aggaaatatg aattgtgctt attttcataa tgggaaaatg caccctacct 800
 tctgtgagaa caaacattat ttaatgtgtg agaggaaggc tggcatgacc 850
 aaggtggacc aactacctta atgcaaagag gtggacagga taacacagat 900
 aagggcttta ttgtacaata aaagatatgt atgaatgcat cagtagctga 950
 aaaaaaaaaa aaa 963

<210> 424
 <211> 229
 <212> PRT
 <213> Homo sapiens

<400> 424
 Met Gln Asp Glu Asp Gly Tyr Ile Thr Leu Asn Ile Lys Thr Arg
 1 5 10 15
 Lys Pro Ala Leu Val Ser Val Gly Pro Ala Ser Ser Ser Trp Trp
 20 25 30
 Arg Val Met Ala Leu Ile Leu Leu Ile Leu Cys Val Gly Met Val
 35 40 45
 Val Gly Leu Val Ala Leu Gly Ile Trp Ser Val Met Gln Arg Asn
 50 55 60
 Tyr Leu Gln Asp Glu Asn Glu Asn Arg Thr Gly Thr Leu Gln Gln
 65 70 75

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ala | Lys | Arg | Phe | Cys | Gln | Tyr | Val | Val | Lys | Gln | Ser | Glu | Leu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Lys | Gly | Thr | Phe | Lys | Gly | His | Lys | Cys | Ser | Pro | Cys | Asp | Thr | Asn |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Trp | Arg | Tyr | Tyr | Gly | Asp | Ser | Cys | Tyr | Gly | Phe | Phe | Arg | His | Asn |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Leu | Thr | Trp | Glu | Glu | Ser | Lys | Gln | Tyr | Cys | Thr | Asp | Met | Asn | Ala |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Thr | Leu | Leu | Lys | Ile | Asp | Asn | Arg | Asn | Ile | Val | Glu | Tyr | Ile | Lys |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Ala | Arg | Thr | His | Leu | Ile | Arg | Trp | Val | Gly | Leu | Ser | Arg | Gln | Lys |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ser | Asn | Glu | Val | Trp | Lys | Trp | Glu | Asp | Gly | Ser | Val | Ile | Ser | Glu |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Asn | Met | Phe | Glu | Phe | Leu | Glu | Asp | Gly | Lys | Gly | Asn | Met | Asn | Cys |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Ala | Tyr | Phe | His | Asn | Gly | Lys | Met | His | Pro | Thr | Phe | Cys | Glu | Asn |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Lys | His | Tyr | Leu | Met | Cys | Glu | Arg | Lys | Ala | Gly | Met | Thr | Lys | Val |
| | | | | 215 | | | | | 220 | | | | | 225 |

Asp Gln Leu Pro

<210> 425

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 425

tgcagcccct gtgacacaaa ctgg 24

<210> 426

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 426

ctgagataac cgagccatcc tcccac 26

<210> 427

<211> 49

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 427
gcttcctgac actaaggctg tctgctagtc agaattgcct caaaaagag 49

<210> 428
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 428
ccaccaatgg cagccccacc t 21

<210> 429
<211> 17
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 429
gactgccctc cctgccca 17

<210> 430
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 430
caaaaagcct ggaagtcttc aaag 24

<210> 431
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 431
cagctggact gcaggtgcta 20

<210> 432
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 432
cagtgagcac agcaagtgtc ct 22

<210> 433
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 433
ggccacctcc ttgagtcttc agttccct 28

<210> 434
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 434
caactactgg ctaaagctgg tgaa 24

<210> 435
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 435
cctttctgta taggtgatac ccaatga 27

<210> 436
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 436
tggccatccc taccagaggc aaaa 24

<210> 437
<211> 22
<212> DNA
<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 437

ctgaagacga cgcggattac ta 22

<210> 438

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 438

ggcagaaatg ggaggcaga 19

<210> 439

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 439

tgctctgttg gctacggctt tagtccctag 30

<210> 440

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 440

agcagcagcc atgtagaatg aa 22

<210> 441

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 441

aatacgaaca gtgcacgctg at 22

<210> 442

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 442
tccagagagc caagcacggc aga 23

<210> 443
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 443
tctagccagc ttggctccaa ta 22

<210> 444
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 444
cctggctcta gcaccaactc ata 23

<210> 445
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 445
tcagtggccc taaggagatg ggcct 25

<210> 446
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 446
caggatacag tgggaatctt gaga 24

<210> 447
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 447
cctgaagggc ttggagctta gt 22

<210> 448
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 448
tctttggcca tttcccatgg ctca 24

<210> 449
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 449
cccatggcga ggaggaat 18

<210> 450
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 450
tgcgtacgtg tgccttcag 19

<210> 451
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 451
cagcacccca ggcagtctgt gtgt 24

<210> 452
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 452
aacgtgctac acgaccagtg tact 24

<210> 453

<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 453
cacagcatat tcagatgact aaatcca 27

<210> 454
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 454
ttgttttagtt ctccaccgtg tctccacaga a 31

<210> 455
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 455
tgtcagaatg caacctggct t 21

<210> 456
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 456
tgatgtgcct ggctcagaac 20

<210> 457
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 457
tgcacctaga tgtccccagc accc 24

<210> 458
<211> 20
<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 458
aagatgcgcc aggcttctta 20

<210> 459
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 459
ctcctgtacg gtctgctcac ttat 24

<210> 460
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 460
tggctgtcag tccagtgtgc atgg 24

<210> 461
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 461
gcatagggat agataagatc ctgctttat 29

<210> 462
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 462
caaattaaag tacccatcag gagagaa 27

<210> 463
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 463
aagttgctaa atatatacat tatctgcgcc aagtcca 37

<210> 464
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 464
gtgctgcca caattcatga 20

<210> 465
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 465
gtccttggtgta tgggtctgaa ttatat 26

<210> 466
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 466
actctctgca cccacagtc accactatct c 31

<210> 467
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 467
ctgaggaacc agccatgtct ct 22

<210> 468
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 468
gaccagatgc aggtacagga tga 23

<210> 469
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 469
ctgccccttc agtgatgcca acctt 25

<210> 470
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 470
gggtggaggc tctactgagta ga 22

<210> 471
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 471
caatacaggt aatgaaactc tgcttctt 28

<210> 472
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 472
tcctcttaag cataggccat tttctcagtt tagaca 36

<210> 473
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 473

ggtggtcttg cttggtctca c 21

<210> 474

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 474

ccgtcgttca gcaacatgac 20

<210> 475

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 475

accgcctacc gctgtgccca 20

<210> 476

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 476

cagtaaaacc acaggctgga ttt 23

<210> 477

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 477

cctgagagca agaaggttga gaat 24

<210> 478

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 478

tagacaggga ccatggcccg ca 22

<210> 479
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 479
tgggctgtag aagagttggt g 21

<210> 480
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 480
tccacacttg gccagtttat 20

<210> 481
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 481
cccaacttct cccttttgga ccct 24

<210> 482
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 482
gtcccttcac tgtttagagc atga 24

<210> 483
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 483
actctccccc tcaacagcct cctgag 26

<210> 484
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 484
gtggtcaggg cagatccttt 20

<210> 485
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 485
acagatccag gagagactcc aca 23

<210> 486
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 486
agcggcgctc ccagcctgaa t 21

<210> 487
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 487
catgattggc cctcagttcc atc 23

<210> 488
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 488
atagagggct cccagaagtg 20

<210> 489
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 489
cagggccttc agggccttca c 21

<210> 490
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 490
gctcagccaa acactgtca 19

<210> 491
<211> 17
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 491
ggggccctga cagtgtt 17

<210> 492
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 492
ctgagccgag actggagcat ctacac 26

<210> 493
<211> 17
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 493
gtgggcagcg tcttgtc 17

<210> 494
<211> 1231
<212> DNA
<213> Homo Sapien

<400> 494

```

cccacgcgtc cgcgcagtcg cgcagttctg cctccgcctg ccagtctcgc 50
ccgcgatccc ggccccggggc tgtggcgctg actccgaccc aggcagccag 100
cagccccgcg gggagccgga ccgccgccgg aggagctcgg acggcatgct 150
gagccccctc ctttgctgaa gcccgagtcg ggagaagccc gggcaaacgc 200
aggctaagga gaccaaagcg gcgaagtcgc gagacagcgg acaagcagcg 250
gaggagaagg aggaggaggc gaaccagag aggggcagca aaagaagcgg 300
tggtggtggg cgtcgtggcc atggcgccgg ctatcgccag ctcgctcatc 350
cgtcagaaga ggcaagcccc cgagcgcgag aaatccaacg cctgcaagtg 400
tgtcagcagc ccagcaaag gcaagaccag ctgcgacaaa aacaagttaa 450
atgtcttttc ccgggtcaaa ctcttcggct ccaagaagag gcgcagaaga 500
agaccagagc ctacagcttaa gggatatagt accaagctat acagccgaca 550
aggctaccac ttgcagctgc aggcggatgg aaccattgat ggcaccaaag 600
atgaggacag cacttacact ctgtttaacc tcatccctgt gggctctgca 650
gtggtggcta tccaaggagt tcaaaccaag ctgtacttgg caatgaacag 700
tgagggatac ttgtacacct cggaactttt cacacctgag tgcaaattca 750
aagaatcagt gtttgaaaat tattatgtga catattcatc aatgatatac 800
cgtcagcagc agtcaggccg agggtggtat ctgggtctga acaaagaagg 850
agagatcatg aaaggcaacc atgtgaagaa gaacaagcct gcagctcatt 900
ttctgcctaa accactgaaa gtggccatgt acaaggagcc atcactgcac 950
gatctcacgg agttctcccg atctggaagc gggaccccaa ccaagagcag 1000
aagtgtctct ggcgtgctga acggaggcaa atccatgagc cacaatgaat 1050
caacgtagcc agtgagggca aaagaagggc tctgtaacag aaccttacct 1100
ccaggtgctg ttgaattctt ctagcagtc ttcacccaaa agttcaaatt 1150
tgtcagtgac atttaccaa caaacaggca gagttcacta ttctatctgc 1200
cattagacct tcttatcatc catactaaag c 1231

```

<210> 495

<211> 245

<212> PRT

<213> Homo Sapien

<400> 495

Met Ala Ala Ala Ile Ala Ser Ser Leu Ile Arg Gln Lys Arg Gln

| 1 | 5 | 10 | 15 |
|-----------------|-----------------|-----------------|-------------|
| Ala Arg Glu Arg | Glu Lys Ser Asn | Ala Cys Lys Cys | Val Ser Ser |
| | 20 | 25 | 30 |
| Pro Ser Lys Gly | Lys Thr Ser Cys | Asp Lys Asn Lys | Leu Asn Val |
| | 35 | 40 | 45 |
| Phe Ser Arg Val | Lys Leu Phe Gly | Ser Lys Lys Arg | Arg Arg Arg |
| | 50 | 55 | 60 |
| Arg Pro Glu Pro | Gln Leu Lys Gly | Ile Val Thr Lys | Leu Tyr Ser |
| | 65 | 70 | 75 |
| Arg Gln Gly Tyr | His Leu Gln Leu | Gln Ala Asp Gly | Thr Ile Asp |
| | 80 | 85 | 90 |
| Gly Thr Lys Asp | Glu Asp Ser Thr | Tyr Thr Leu Phe | Asn Leu Ile |
| | 95 | 100 | 105 |
| Pro Val Gly Leu | Arg Val Val Ala | Ile Gln Gly Val | Gln Thr Lys |
| | 110 | 115 | 120 |
| Leu Tyr Leu Ala | Met Asn Ser Glu | Gly Tyr Leu Tyr | Thr Ser Glu |
| | 125 | 130 | 135 |
| Leu Phe Thr Pro | Glu Cys Lys Phe | Lys Glu Ser Val | Phe Glu Asn |
| | 140 | 145 | 150 |
| Tyr Tyr Val Thr | Tyr Ser Ser Met | Ile Tyr Arg Gln | Gln Gln Ser |
| | 155 | 160 | 165 |
| Gly Arg Gly Trp | Tyr Leu Gly Leu | Asn Lys Glu Gly | Glu Ile Met |
| | 170 | 175 | 180 |
| Lys Gly Asn His | Val Lys Lys Asn | Lys Pro Ala Ala | His Phe Leu |
| | 185 | 190 | 195 |
| Pro Lys Pro Leu | Lys Val Ala Met | Tyr Lys Glu Pro | Ser Leu His |
| | 200 | 205 | 210 |
| Asp Leu Thr Glu | Phe Ser Arg Ser | Gly Ser Gly Thr | Pro Thr Lys |
| | 215 | 220 | 225 |
| Ser Arg Ser Val | Ser Gly Val Leu | Asn Gly Gly Lys | Ser Met Ser |
| | 230 | 235 | 240 |
| His Asn Glu Ser | Thr | | |
| | 245 | | |

<210> 496

<211> 1471

<212> DNA

<213> Homo Sapien

<400> 496

ccaggatgga gctggggcct gtatagccat attattgttc tatgctacta 50

gacatggggg ggacttggtg aaaaagggtat tatccagcca gaggggtctgg 100
gagccctgtc ttactgaacc tgggcaacct ggatattctg agacatatTT 150
tggggggatt tcagtgaaaa aagtggggga tcccctccat ttagagtgtg 200
gcaaaggaaa aaacaccaag gttgggttcc ttcctgacat tggcagtgcc 250
ccagtagggg tgggatgagc gaatattccc aaagctaaag tcccacaccc 300
tgtagattac aagagtggat ttggcaggag tgtgccccaa aatacagtgg 350
aaaggTgcct gaagatatTT aaaccacgtc ttggaaatTT agtgggtcTT 400
ggctttggga taggtgaagt gaggacagac actggagagg agggaaaggg 450
gacgttttca ataggaggca aaactcgagg gtgggatcca ctgaggagta 500
cataggctgc tggatctggt ggagccagca ctggggccac gggTggtaac 550
tggctgctgt ggaggggggt acgtgagggg ggggtctggg gcttatcctc 600
aggtcctgtg ggtggggcag cgagtcgggg cctgagcgtc aagagcatgc 650
cctagtgagc gggctcctct gggggagccc agcgcgctcc gggcgctgc 700
cggtttgggg gtgtctcctc ccggggcgct atggcggcgc tggccagtag 750
cctgatccgg cagaagcggg aggtccgcga gcccgggggc agccggccgg 800
tgtcggcgca gcggcgctg tgtccccgcg gcaccaagtc cctttgccag 850
aagcagctcc tcatcctgct gtccaaggTg cgactgtgcg gggggcggcc 900
cgcgcgggcc gaccgcggcc cggagcctca gctcaaaggc atcgTcacca 950
aactgtttctg ccgccagggt ttctacctcc aggcgaatcc cgacggaagc 1000
atccagggca cccagaggga taccagctcc ttcacccact tcaacctgat 1050
ccctgtgggc ctccgtgtgg tcaccatcca gagcgccaag ctgggtcact 1100
acatggccat gaatgctgag ggactgctct acagtTcgcc gcatttcaca 1150
gctgagtgtc gctttaagga gtgtgtcttt gagaattact acgtcctgta 1200
cgctctgct ctctaccgcc agcgTcgTtc tggccgggcc tggTacctcg 1250
gcctggacaa ggagggccag gtcatgaagg gaaaccgagt taagaagacc 1300
aaggcagctg cccactttct gcccagctc ctggaggtgg ccatgtacca 1350
ggagccttct ctccacagtg tccccgaggc ctccccttcc agtccccctg 1400
ccccctgaaa tgtagtccct ggactggagg ttcctgcac tcccagtgag 1450

ccagccacca ccacaacctg t 1471

<210> 497

<211> 225

<212> PRT

<213> Homo Sapien

<400> 497

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ala | Leu | Ala | Ser | Ser | Leu | Ile | Arg | Gln | Lys | Arg | Glu | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Arg | Glu | Pro | Gly | Gly | Ser | Arg | Pro | Val | Ser | Ala | Gln | Arg | Arg | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Cys | Pro | Arg | Gly | Thr | Lys | Ser | Leu | Cys | Gln | Lys | Gln | Leu | Leu | Ile |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Leu | Leu | Ser | Lys | Val | Arg | Leu | Cys | Gly | Gly | Arg | Pro | Ala | Arg | Pro |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Asp | Arg | Gly | Pro | Glu | Pro | Gln | Leu | Lys | Gly | Ile | Val | Thr | Lys | Leu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Phe | Cys | Arg | Gln | Gly | Phe | Tyr | Leu | Gln | Ala | Asn | Pro | Asp | Gly | Ser |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ile | Gln | Gly | Thr | Pro | Glu | Asp | Thr | Ser | Ser | Phe | Thr | His | Phe | Asn |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Leu | Ile | Pro | Val | Gly | Leu | Arg | Val | Val | Thr | Ile | Gln | Ser | Ala | Lys |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Leu | Gly | His | Tyr | Met | Ala | Met | Asn | Ala | Glu | Gly | Leu | Leu | Tyr | Ser |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ser | Pro | His | Phe | Thr | Ala | Glu | Cys | Arg | Phe | Lys | Glu | Cys | Val | Phe |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Glu | Asn | Tyr | Tyr | Val | Leu | Tyr | Ala | Ser | Ala | Leu | Tyr | Arg | Gln | Arg |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Arg | Ser | Gly | Arg | Ala | Trp | Tyr | Leu | Gly | Leu | Asp | Lys | Glu | Gly | Gln |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Val | Met | Lys | Gly | Asn | Arg | Val | Lys | Lys | Thr | Lys | Ala | Ala | Ala | His |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Phe | Leu | Pro | Lys | Leu | Leu | Glu | Val | Ala | Met | Tyr | Gln | Glu | Pro | Ser |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Leu | His | Ser | Val | Pro | Glu | Ala | Ser | Pro | Ser | Ser | Pro | Pro | Ala | Pro |
| | | | | 215 | | | | | 220 | | | | | 225 |

<210> 498

<211> 744

<212> DNA

<213> Homo Sapien

<400> 498

atggccgcgg ccatacgttag cggcttgatc cgccagaagc ggcaggcgcg 50
ggagcagcac tgggaccggc cgtctgccag caggaggcgg agcagcccca 100
gcaagaaccg cgggctctgc aacggcaacc tgggtggatat cttctccaaa 150
gtgcgcatct tcggcctcaa gaagcgcagg ttgcggcgcc aagatcccca 200
gctcaagggg atagtgacca gggttatattg caggcaaggc tactacttgc 250
aaatgcaccc cgatggagct ctcatggaa ccaaggatga cagcactaat 300
tctacactct tcaacctcat accagtggga ctacgtgttg ttgccatcca 350
gggagtgaaa acagggttgt atatagccat gaatggagaa gggtacctct 400
acccatcaga actttttacc cctgaatgca agtttaaaga atctgttttt 450
gaaaattatt atgtaatcta ctcatccatg ttgtacagac aacaggaatc 500
tggtagagcc tggtttttgg gattaaataa ggaagggcaa gctatgaaag 550
ggaacagagt aaagaaaacc aaaccagcag ctcattttct acccaagcca 600
ttggaagttg ccatgtaccg agaaccatct ttgcatgatg ttggggaaac 650
ggccccgaag cctgggggtga cgccaagtaa aagcacaagt gcgtctgcaa 700
taatgaatgg aggcaaacca gtcaacaaga gtaagacaac atag 744

<210> 499

<211> 247

<212> PRT

<213> Homo Sapien

<400> 499

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ala | Ala | Ile | Ala | Ser | Gly | Leu | Ile | Arg | Gln | Lys | Arg | Gln |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ala | Arg | Glu | Gln | His | Trp | Asp | Arg | Pro | Ser | Ala | Ser | Arg | Arg | Arg |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ser | Ser | Pro | Ser | Lys | Asn | Arg | Gly | Leu | Cys | Asn | Gly | Asn | Leu | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Asp | Ile | Phe | Ser | Lys | Val | Arg | Ile | Phe | Gly | Leu | Lys | Lys | Arg | Arg |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Leu | Arg | Arg | Gln | Asp | Pro | Gln | Leu | Lys | Gly | Ile | Val | Thr | Arg | Leu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Tyr | Cys | Arg | Gln | Gly | Tyr | Tyr | Leu | Gln | Met | His | Pro | Asp | Gly | Ala |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Leu | Asp | Gly | Thr | Lys | Asp | Asp | Ser | Thr | Asn | Ser | Thr | Leu | Phe | Asn |

| | 95 | 100 | 105 |
|-----------------|---------------------|---------------------|-----|
| Leu Ile Pro Val | Gly Leu Arg Val Val | Ala Ile Gln Gly Val | Lys |
| | 110 | 115 | 120 |
| Thr Gly Leu Tyr | Ile Ala Met Asn Gly | Glu Gly Tyr Leu Tyr | Pro |
| | 125 | 130 | 135 |
| Ser Glu Leu Phe | Thr Pro Glu Cys Lys | Phe Lys Glu Ser Val | Phe |
| | 140 | 145 | 150 |
| Glu Asn Tyr Tyr | Val Ile Tyr Ser Ser | Met Leu Tyr Arg Gln | Gln |
| | 155 | 160 | 165 |
| Glu Ser Gly Arg | Ala Trp Phe Leu Gly | Leu Asn Lys Glu Gly | Gln |
| | 170 | 175 | 180 |
| Ala Met Lys Gly | Asn Arg Val Lys Lys | Thr Lys Pro Ala Ala | His |
| | 185 | 190 | 195 |
| Phe Leu Pro Lys | Pro Leu Glu Val Ala | Met Tyr Arg Glu Pro | Ser |
| | 200 | 205 | 210 |
| Leu His Asp Val | Gly Glu Thr Val Pro | Lys Pro Gly Val Thr | Pro |
| | 215 | 220 | 225 |
| Ser Lys Ser Thr | Ser Ala Ser Ala Ile | Met Asn Gly Gly Lys | Pro |
| | 230 | 235 | 240 |
| Val Asn Lys Ser | Lys Thr Thr | | |
| | 245 | | |

<210> 500
 <211> 2906
 <212> DNA
 <213> Homo Sapien

<400> 500
 ggggagagga attgaccatg taaaaggaga cttttttttt tgggtggtggt 50
 ggctgttggg tgccttgcaa aaatgaagga tgcaggacgc agctttctcc 100
 tggaaccgaa cgcaatggat aaactgattg tgcaagagag aaggaagaac 150
 gaagcttttt cttgtgagcc ctggatctta acacaaatgt gtatatgtgc 200
 acacagggag cattcaagaa tgaaataaac cagagttaga cccgcggggg 250
 ttggtgtgtt ctgacataaa taaataatct taaagcagct gttcccctcc 300
 ccacccccaa aaaaaaggat gattggaaat gaagaaccga ggattcacia 350
 agaaaaaagt atgttcattt ttctctataa aggagaaagt gagccaagga 400
 gatatttttg gaatgaaaag tttggggcctt ttttagtaaa gtaaagaact 450
 ggtgtggtgg tgttttcctt tctttttgaa tttcccacia gaggagagga 500

aattaataat acatctgcaa agaaatttca gagaagaaaa gttgaccgcg 550
gcagattgag gcattgattg ggggagagaa accagcagag cacagttgga 600
tttgtgccta tgttgactaa aattgacgga taattgcagt tggatttttc 650
ttcatcaacc tccttttttt taaattttta ttccttttgg tatcaagatc 700
atgcgttttc tcttgttctt aaccacctgg atttccatct ggatgttgct 750
gtgatcagtc tgaaatacaa ctgtttgaat tccagaagga ccaacaccag 800
ataaattatg aatgttgaac aagatgacct tacatccaca gcagataatg 850
ataggtccta ggtttaacag ggcctatatt gacccctgc ttgtggtgct 900
gctggctctt caacttcttg tgggtggctgg tctggtgcgg gctcagacct 950
gcccttctgt gtgctcctgc agcaaccagt tcagcaaggt gatttgtgtt 1000
cggaaaaacc tgcgtagaggt tccggatggc atctccacca acacacggct 1050
gctgaacctc catgagaacc aaatccagat catcaaagt aacagcttca 1100
agcacttgag gcacttgga atcctacagt tgagtaggaa ccatatcaga 1150
accattgaaa ttggggcttt caatggctctg gcgaacctca acactctgga 1200
actctttgac aatcgcttta ctaccatccc gaatggagct tttgtatact 1250
tgtctaaact gaaggagctc tggttgcgaa acaaccccat tgaaagcatc 1300
ccttcttatg cttttaacag aattccttct ttgcgccgac tagacttagg 1350
ggaattgaaa agactttcat acatctcaga aggtgccttt gaaggctctgt 1400
ccaacttgag gtatttgaac cttgccatgt gcaaccttcg ggaaatccct 1450
aacctcacac cgctcataaa actagatgag ctggatcttt ctgggaatca 1500
tttatctgcc atcaggcctg gctctttcca gggtttgatg caccttcaaa 1550
aactgtggat gatacagtc cagattcaag tgattgaacg gaatgccttt 1600
gacaaccttc agtcactagt ggagatcaac ctggcacaca ataactaac 1650
attactgcct catgacctct tcaactccctt gcacatcta gagcggatac 1700
atttacatca caacccttgg aactgtaact gtgacatact gtggctcagc 1750
tgggtggataa aagacatggc cccctcgaac acagcttggt gtgcccgggtg 1800
taacactcct cccaatctaa aggggaggta cattggagag ctcgaccaga 1850
attacttcac atgctatgct ccggtgattg tggagcccc tgcagacctc 1900

aatgtcactg aaggcatggc agctgagctg aaatgtcggg cctccacatc 1950
 cctgacatct gtatcttggg ttactccaaa tggaacagtc atgacacatg 2000
 gggcgtacaa agtgcgata gctgtgctca gtgatggtac gttaaatttc 2050
 acaaatgtaa ctgtgcaaga tacaggcatg tacacatgta tggtagta 2100
 ttccgttggg aatactactg cttcagccac cctgaatggt actgcagcaa 2150
 ccactactcc tttctcttac ttttcaaccg tcacagtaga gactatggaa 2200
 ccgtctcagg atgaggcacg gaccacagat aacaatgtgg gtcccactcc 2250
 agtgggtcgac tgggagacca ccaatgtgac cacctctctc acaccacaga 2300
 gcacaaggtc gacagagaaa accttcacca tcccagtgac tgatataaac 2350
 agtgggatcc caggaattga tgaggatcatg aagactacca aaatcatcat 2400
 tgggtgtttt gtggccatca cactcatggc tgcagtgatg ctggtcattt 2450
 tctacaagat gaggaagcag caccatcggc aaaaccatca cgccccaaca 2500
 aggactgttg aaattattaa tgtggatgat gagattacgg gagacacacc 2550
 catggaaagc cacctgcca tgctgctat cgagcatgag cacctaaatc 2600
 actataactc atacaaatct cccttcaacc acacaacaac agttaacaca 2650
 ataaattcaa tacacagttc agtgcataaa ccgttattga tccgaatgaa 2700
 ctctaaagac aatgtacaag agactcaaat ctaaaacatt tacagagtta 2750
 caaaaaacaa acaatcaaaa aaaaagacag ttattataaa atgacacaaa 2800
 tgactgggct aaatctactg tttcaaaaaa gtgtctttac aaaaaaaca 2850
 aaaagaaaag aaatttatat attaaaaatt ctattgtgat ctaaagcaga 2900
 caaaaa 2906

<210> 501
 <211> 640
 <212> PRT
 <213> Homo Sapien

<400> 501
 Met Leu Asn Lys Met Thr Leu His Pro Gln Gln Ile Met Ile Gly
 1 5 10 15
 Pro Arg Phe Asn Arg Ala Leu Phe Asp Pro Leu Leu Val Val Leu
 20 25 30
 Leu Ala Leu Gln Leu Leu Val Val Ala Gly Leu Val Arg Ala Gln
 35 40 45

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Cys | Pro | Ser | Val | Cys | Ser | Cys | Ser | Asn | Gln | Phe | Ser | Lys | Val | 50 | 55 | 60 |
| Ile | Cys | Val | Arg | Lys | Asn | Leu | Arg | Glu | Val | Pro | Asp | Gly | Ile | Ser | 65 | 70 | 75 |
| Thr | Asn | Thr | Arg | Leu | Leu | Asn | Leu | His | Glu | Asn | Gln | Ile | Gln | Ile | 80 | 85 | 90 |
| Ile | Lys | Val | Asn | Ser | Phe | Lys | His | Leu | Arg | His | Leu | Glu | Ile | Leu | 95 | 100 | 105 |
| Gln | Leu | Ser | Arg | Asn | His | Ile | Arg | Thr | Ile | Glu | Ile | Gly | Ala | Phe | 110 | 115 | 120 |
| Asn | Gly | Leu | Ala | Asn | Leu | Asn | Thr | Leu | Glu | Leu | Phe | Asp | Asn | Arg | 125 | 130 | 135 |
| Leu | Thr | Thr | Ile | Pro | Asn | Gly | Ala | Phe | Val | Tyr | Leu | Ser | Lys | Leu | 140 | 145 | 150 |
| Lys | Glu | Leu | Trp | Leu | Arg | Asn | Asn | Pro | Ile | Glu | Ser | Ile | Pro | Ser | 155 | 160 | 165 |
| Tyr | Ala | Phe | Asn | Arg | Ile | Pro | Ser | Leu | Arg | Arg | Leu | Asp | Leu | Gly | 170 | 175 | 180 |
| Glu | Leu | Lys | Arg | Leu | Ser | Tyr | Ile | Ser | Glu | Gly | Ala | Phe | Glu | Gly | 185 | 190 | 195 |
| Leu | Ser | Asn | Leu | Arg | Tyr | Leu | Asn | Leu | Ala | Met | Cys | Asn | Leu | Arg | 200 | 205 | 210 |
| Glu | Ile | Pro | Asn | Leu | Thr | Pro | Leu | Ile | Lys | Leu | Asp | Glu | Leu | Asp | 215 | 220 | 225 |
| Leu | Ser | Gly | Asn | His | Leu | Ser | Ala | Ile | Arg | Pro | Gly | Ser | Phe | Gln | 230 | 235 | 240 |
| Gly | Leu | Met | His | Leu | Gln | Lys | Leu | Trp | Met | Ile | Gln | Ser | Gln | Ile | 245 | 250 | 255 |
| Gln | Val | Ile | Glu | Arg | Asn | Ala | Phe | Asp | Asn | Leu | Gln | Ser | Leu | Val | 260 | 265 | 270 |
| Glu | Ile | Asn | Leu | Ala | His | Asn | Asn | Leu | Thr | Leu | Leu | Pro | His | Asp | 275 | 280 | 285 |
| Leu | Phe | Thr | Pro | Leu | His | His | Leu | Glu | Arg | Ile | His | Leu | His | His | 290 | 295 | 300 |
| Asn | Pro | Trp | Asn | Cys | Asn | Cys | Asp | Ile | Leu | Trp | Leu | Ser | Trp | Trp | 305 | 310 | 315 |
| Ile | Lys | Asp | Met | Ala | Pro | Ser | Asn | Thr | Ala | Cys | Cys | Ala | Arg | Cys | 320 | 325 | 330 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Thr | Pro | Pro | Asn | Leu | Lys | Gly | Arg | Tyr | Ile | Gly | Glu | Leu | Asp | 335 | 340 | 345 |
| Gln | Asn | Tyr | Phe | Thr | Cys | Tyr | Ala | Pro | Val | Ile | Val | Glu | Pro | Pro | 350 | 355 | 360 |
| Ala | Asp | Leu | Asn | Val | Thr | Glu | Gly | Met | Ala | Ala | Glu | Leu | Lys | Cys | 365 | 370 | 375 |
| Arg | Ala | Ser | Thr | Ser | Leu | Thr | Ser | Val | Ser | Trp | Ile | Thr | Pro | Asn | 380 | 385 | 390 |
| Gly | Thr | Val | Met | Thr | His | Gly | Ala | Tyr | Lys | Val | Arg | Ile | Ala | Val | 395 | 400 | 405 |
| Leu | Ser | Asp | Gly | Thr | Leu | Asn | Phe | Thr | Asn | Val | Thr | Val | Gln | Asp | 410 | 415 | 420 |
| Thr | Gly | Met | Tyr | Thr | Cys | Met | Val | Ser | Asn | Ser | Val | Gly | Asn | Thr | 425 | 430 | 435 |
| Thr | Ala | Ser | Ala | Thr | Leu | Asn | Val | Thr | Ala | Ala | Thr | Thr | Thr | Pro | 440 | 445 | 450 |
| Phe | Ser | Tyr | Phe | Ser | Thr | Val | Thr | Val | Glu | Thr | Met | Glu | Pro | Ser | 455 | 460 | 465 |
| Gln | Asp | Glu | Ala | Arg | Thr | Thr | Asp | Asn | Asn | Val | Gly | Pro | Thr | Pro | 470 | 475 | 480 |
| Val | Val | Asp | Trp | Glu | Thr | Thr | Asn | Val | Thr | Thr | Ser | Leu | Thr | Pro | 485 | 490 | 495 |
| Gln | Ser | Thr | Arg | Ser | Thr | Glu | Lys | Thr | Phe | Thr | Ile | Pro | Val | Thr | 500 | 505 | 510 |
| Asp | Ile | Asn | Ser | Gly | Ile | Pro | Gly | Ile | Asp | Glu | Val | Met | Lys | Thr | 515 | 520 | 525 |
| Thr | Lys | Ile | Ile | Ile | Gly | Cys | Phe | Val | Ala | Ile | Thr | Leu | Met | Ala | 530 | 535 | 540 |
| Ala | Val | Met | Leu | Val | Ile | Phe | Tyr | Lys | Met | Arg | Lys | Gln | His | His | 545 | 550 | 555 |
| Arg | Gln | Asn | His | His | Ala | Pro | Thr | Arg | Thr | Val | Glu | Ile | Ile | Asn | 560 | 565 | 570 |
| Val | Asp | Asp | Glu | Ile | Thr | Gly | Asp | Thr | Pro | Met | Glu | Ser | His | Leu | 575 | 580 | 585 |
| Pro | Met | Pro | Ala | Ile | Glu | His | Glu | His | Leu | Asn | His | Tyr | Asn | Ser | 590 | 595 | 600 |
| Tyr | Lys | Ser | Pro | Phe | Asn | His | Thr | Thr | Thr | Val | Asn | Thr | Ile | Asn | 605 | 610 | 615 |

Ser Ile His Ser Ser Val His Glu Pro Leu Leu Ile Arg Met Asn
620 625 630

Ser Lys Asp Asn Val Gln Glu Thr Gln Ile
635 640

<210> 502

<211> 2458

<212> DNA

<213> Homo Sapien

<400> 502

gcgccgggag cccatctgcc cccaggggca cggggcgcg ggcgggtcc 50
cgccccggcac atggctgcag ccacctcgcg cgcaccccgaggcgccgc 100
ccagctcgcc cgaggtccgt cggaggcgcc cggccgcccc ggagccaagc 150
agcaactgag cggggaagcg cccgcgtccg gggatcgga tgtccctcct 200
ccttctcctc ttgctagttt cctactatgt tggaaccttg gggactcaca 250
ctgagatcaa gagagtggca gaggaaaagg tcactttgcc ctgccaccat 300
caactggggc ttccagaaaa agacactctg gatattgaat ggctgctcac 350
cgataatgaa gggaaccaa aagtggatgat cacttactcc agtcgtcatg 400
tctacaataa cttgactgag gaacagaagg gccgagtggc ctttgcttcc 450
aatttctctg caggagatgc ctccttgag attgaacctc tgaagcccag 500
tgatgagggc cggtacacct gtaagggtta gaattcaggg cgctacgtgt 550
ggagccatgt catcttaaaa gtcttagtga gaccatcaa gcccaagtgt 600
gagttggaag gagagctgac agaaggaagt gacctgactt tgcagtgtga 650
gtcatcctct ggcacagagc ccattgtgta ttactggcag cgaatccgag 700
agaaagaggg agaggatgaa cgtctgcctc ccaaactag gattgactac 750
aaccaccctg gacgagttct gctgcagaat cttaccatgt cctactctgg 800
actgtaccag tgcacagcag gcaacgaagc tgggaaggaa agctgtgtgg 850
tgcgagtaac tgtacagtat gtacaaagca tcggcatggt tgcaggagca 900
gtgacaggca tagtggctgg agccctgctg attttctct tgggtgtggct 950
gctaattccga aggaagaca aagaaagata tgaggaagaa gagagaccta 1000
atgaaattcg agaagatgct gaagctccaa aagccgtct tgtgaaacct 1050
agctcctctt cctcaggctc tcggagctca cgctctgggt cttcctccac 1100
tcgctccaca gcaaatagtg cctcacgcag ccagcggaca ctgtcaactg 1150

acgcagcacc ccagccaggg ctggccaccc aggcatacag cctagtgggg 1200
 ccagaggtga gaggttctga accaaagaaa gtccaccatg ctaatctgac 1250
 caaagcagaa accacacca gcatgatccc cagccagagc agagccttcc 1300
 aaacggtctg aattacaatg gacttgactc ccacgcttcc ctaggagtca 1350
 gggctcttgg actcttctcg tcattggagc tcaagtcacc agccacacaa 1400
 ccagatgaga ggtcatctaa gtagcagtga gcattgcacg gaacagattc 1450
 agatgagcat tttccttata caataccaaa caagcaaaag gatgtaagct 1500
 gattcatctg taaaaaggca tcttattgtg ccttttagacc agagtaaggg 1550
 aaagcaggag tccaaatcta tttgttgacc aggacctgtg gtgagaaggt 1600
 tggggaaagg tgaggtgaat atacctaaaa cttttaatgt gggatatttt 1650
 gtatcagtgc tttgattcac aattttcaag aggaaatggg atgctgtttg 1700
 taaattttct atgcatttct gcaaacttat tggattatta gttattcaga 1750
 cagtcaagca gaaccacag ccttattaca cctgtctaca ccatgtactg 1800
 agctaaccac ttctaagaaa ctccaaaaaa ggaaacatgt gtcttctatt 1850
 ctgacttaac ttcatttgtc ataaggtttg gatattaatt tcaaggggag 1900
 ttgaaatagt gggagatgga gaagagtga tgagtttctc cactctata 1950
 ctaatctcac tatttgtatt gagcccaaaa taactatgaa aggagacaaa 2000
 aatttgtgac aaaggattgt gaagagcttt ccatcttcat gatgttatga 2050
 ggattgttga caaacattag aaatatataa tggagcaatt gtggatttcc 2100
 cctcaaatca gatgcctcta aggactttcc tgctagatat ttctggaagg 2150
 agaaaataca acatgtcatt tatcaacgtc cttagaaaga attcttctag 2200
 agaaaaaggg atctaggaat gctgaaagat taccacaacat accattatag 2250
 tctcttcttt ctgagaaaat gtgaaaccag aattgcaaga ctgggtggac 2300
 tagaaaggga gattagatca gttttctctt aatatgtcaa ggaaggtagc 2350
 cgggcatggg gccaggcacc tgtaggaaaa tccagcaggt ggaggttgca 2400
 gtgagccgag attatgccat tgcactccag cctgggtgac agagcgggac 2450
 tccgtctc 2458

<210> 503

<211> 373

<212> PRT
<213> Homo Sapien

<400> 503

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Ser | Leu | Leu | Leu | Leu | Leu | Leu | Leu | Val | Ser | Tyr | Tyr | Val | Gly | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Thr | Leu | Gly | Thr | His | Thr | Glu | Ile | Lys | Arg | Val | Ala | Glu | Glu | Lys | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Val | Thr | Leu | Pro | Cys | His | His | Gln | Leu | Gly | Leu | Pro | Glu | Lys | Asp | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Thr | Leu | Asp | Ile | Glu | Trp | Leu | Leu | Thr | Asp | Asn | Glu | Gly | Asn | Gln | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Lys | Val | Val | Ile | Thr | Tyr | Ser | Ser | Arg | His | Val | Tyr | Asn | Asn | Leu | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Thr | Glu | Glu | Gln | Lys | Gly | Arg | Val | Ala | Phe | Ala | Ser | Asn | Phe | Leu | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Ala | Gly | Asp | Ala | Ser | Leu | Gln | Ile | Glu | Pro | Leu | Lys | Pro | Ser | Asp | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Glu | Gly | Arg | Tyr | Thr | Cys | Lys | Val | Lys | Asn | Ser | Gly | Arg | Tyr | Val | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Trp | Ser | His | Val | Ile | Leu | Lys | Val | Leu | Val | Arg | Pro | Ser | Lys | Pro | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Lys | Cys | Glu | Leu | Glu | Gly | Glu | Leu | Thr | Glu | Gly | Ser | Asp | Leu | Thr | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Leu | Gln | Cys | Glu | Ser | Ser | Ser | Gly | Thr | Glu | Pro | Ile | Val | Tyr | Tyr | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Trp | Gln | Arg | Ile | Arg | Glu | Lys | Glu | Gly | Glu | Asp | Glu | Arg | Leu | Pro | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Pro | Lys | Ser | Arg | Ile | Asp | Tyr | Asn | His | Pro | Gly | Arg | Val | Leu | Leu | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Gln | Asn | Leu | Thr | Met | Ser | Tyr | Ser | Gly | Leu | Tyr | Gln | Cys | Thr | Ala | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Gly | Asn | Glu | Ala | Gly | Lys | Glu | Ser | Cys | Val | Val | Arg | Val | Thr | Val | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Gln | Tyr | Val | Gln | Ser | Ile | Gly | Met | Val | Ala | Gly | Ala | Val | Thr | Gly | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Ile | Val | Ala | Gly | Ala | Leu | Leu | Ile | Phe | Leu | Leu | Val | Trp | Leu | Leu | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Ile | Arg | Arg | Lys | Asp | Lys | Glu | Arg | Tyr | Glu | Glu | Glu | Glu | Arg | Pro | |
| | | | | 260 | | | | | 265 | | | | | 270 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Glu | Ile | Arg | Glu | Asp | Ala | Glu | Ala | Pro | Lys | Ala | Arg | Leu | Val |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Lys | Pro | Ser | Ser | Ser | Ser | Ser | Gly | Ser | Arg | Ser | Ser | Arg | Ser | Gly |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Ser | Ser | Ser | Thr | Arg | Ser | Thr | Ala | Asn | Ser | Ala | Ser | Arg | Ser | Gln |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Arg | Thr | Leu | Ser | Thr | Asp | Ala | Ala | Pro | Gln | Pro | Gly | Leu | Ala | Thr |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Gln | Ala | Tyr | Ser | Leu | Val | Gly | Pro | Glu | Val | Arg | Gly | Ser | Glu | Pro |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Lys | Lys | Val | His | His | Ala | Asn | Leu | Thr | Lys | Ala | Glu | Thr | Thr | Pro |
| | | | | 350 | | | | | 355 | | | | | 360 |
| Ser | Met | Ile | Pro | Ser | Gln | Ser | Arg | Ala | Phe | Gln | Thr | Val | | |
| | | | | 365 | | | | | 370 | | | | | |

<210> 504
 <211> 3060
 <212> DNA
 <213> Homo Sapien

<400> 504
 cgcgaggcgc ggggagcctg ggaccaggag cgagagccgc ctacctgcag 50
 ccgccgcccc cggcacggca gccaccatgg cgctcctgct gtgcttcgtg 100
 ctctgtgceg gagtagtgga tttcgccaga agtttgagta tcactactcc 150
 tgaagagatg attgaaaaag ccaaagggga aactgcctat ctgccatgca 200
 aatttacgct tagtcccgaa gaccagggac cgctggacat cgagtggctg 250
 atatcaccag ctgataatca gaaggtggat caagtgatta ttttatattc 300
 tggagacaaa atttatgatg actactatcc agatctgaaa ggccgagtac 350
 attttacgag taatgatctc aaatctggtg atgcatcaat aaatgtaacg 400
 aatttacaac tgtcagatat tggcacatat cagtgcaaag tgaaaaaagc 450
 tcctggtggt gcaaataaga agattcatct ggtagttctt gttaagcctt 500
 caggtgcgag atgttacggt gatggatctg aagaaattgg aagtgacttt 550
 aagataaaat gtgaacccaa agaaggttca cttccattac agtatgagtg 600
 gcaaaaattg tctgactcac agaaaatgcc cacttcatgg ttagcagaaa 650
 tgacttcatc tgttatatct gtaaaaaatg cctcttctga gtactctggg 700
 acatacagct gtacagtcag aaacagagtg ggctctgatc agtgcctggt 750

gcgtctaaac gttgtccctc cttcaaataa agctggacta attgcaggag 800
ccattatagg aactttgctt gctctagcgc tcattgggtct tatcatcttt 850
tgctgtcgta aaaagcgcag agaagaaaaa tatgaaaagg aagttcatca 900
cgatatcagg gaagatgtgc cacctccaaa gagccgtacg tccactgcca 950
gaagctacat cggcagtaat cattcatccc tgggggtccat gtctccttcc 1000
aacatggaag gatattccaa gactcagtat aaccaagtac caagtgaaga 1050
ctttgaacgc actcctcaga gtccgactct cccacctgct aagttcaagt 1100
acccttaca gactgatgga attacagttg tataaatatg gactactgaa 1150
gaatctgaag tattgtatta ttgacttta ttttaggcct ctagtaaaga 1200
cttaaagtgt ttttaaaaaa agcacaaggc acagagatta gagcagctgt 1250
aagaacacat ctactttatg caatggcatt agacatgtaa gtcagatgtc 1300
atgtcaaaat tagtacgagc caaattcttt gttaaaaaac cctatgtata 1350
gtgacactga tagttaaaag atgttttatt atattttcaa taactaccac 1400
taacaaattt ttaacttttc atatgcatat tctgatatgt ggtcttttag 1450
gaaaagtatg gttaatagtt gatttttcaa aggaaatttt aaaattctta 1500
cgttctgttt aatgtttttg ctatttagtt aaatacattg aagggaaata 1550
cccgttcttt tcccctttta tgcacacaac agaaacacgc gttgtcatgc 1600
ctcaaactat tttttatttg caactacatg atttcacaca attctcttaa 1650
acaacgacat aaaatagatt tccttgtata taaataactt acatacgtc 1700
cataaagtaa attctcaaag gtgctagaac aaatcgtcca cttctacagt 1750
gttctcgat ccaacagagt tgatgcacaa tatataaata ctcaagtcca 1800
atattaaaaa cttaggcact tgactaactt taataaaatt tctcaaaacta 1850
tatcaatatc taaagtgcatt atatttttta agaaagatta ttctcaataa 1900
cttctataaa aataagtttg atggtttggc ccatctaact tcactactat 1950
tagtaagaac ttttaacttt taatgtgtag taaggtttat tctacctttt 2000
tctcaacatg acaccaacac aatcaaaaaac gaagttagt aggtgctaac 2050
atgtgaggat taatccagt attccggtca caatgcattc caggaggagg 2100
taccatgtc actggaattg ggcgatatgg tttatttttt cttccctgat 2150

ttggataacc aaatggaaca ggaggaggat agtgattctg atggccattc 2200
 cctcgataca ttcttggctt ttttctgggc aaaggggtgcc acattggaag 2250
 aggtggaaat ataagttctg aaatctgtag ggaagagaac acattaagtt 2300
 aattcaaagg aaaaaatcat catctatgtt ccagatttct cattaaagac 2350
 aaagttaccc acaacactga gatcacatct aagtgacact cctattgtca 2400
 ggtctaaata cattaaaaac ctcatgtgta ataggcgtat aatgtataac 2450
 aggtgaccaa tgttttctga atgcataaag aaatgaataa actcaaacac 2500
 agtacttcct aaacaacttc aaccaaaaaa gaccaaaaca tggaacgaat 2550
 ggaagcttgt aaggacatgc ttgttttagt ccagtgggtt ccacagctgg 2600
 ctaagccagg agtcacttgg aggcttttaa atacaaaaca ttggagctgg 2650
 aggccattat ccttagcaaa ctaatgcaga aacagaaaat caactaccgc 2700
 atgttctcac ttataagtgg gaggtaatga taagaactta tgaacacaaa 2750
 gaaggaaaca atagacattg gagtctatct gagaggggag ggtgggagaa 2800
 ggaaaaggag cagaaaagat aactattgag tactgccttc acacctgggt 2850
 gatgaaataa tatgtacaac aaatccctgt gacacatgtt tacctatgga 2900
 acaaaccttc atgtgtatcc ctaaacctaa aataaaaagt aaaaaaaaaa 2950
 aaaraaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 3000
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 3050
 aaaaaaaaaa 3060

<210> 505
 <211> 352
 <212> PRT
 <213> Homo Sapien

<400> 505
 Met Ala Leu Leu Leu Cys Phe Val Leu Leu Cys Gly Val Val Asp
 1 5 10 15
 Phe Ala Arg Ser Leu Ser Ile Thr Thr Pro Glu Glu Met Ile Glu
 20 25 30
 Lys Ala Lys Gly Glu Thr Ala Tyr Leu Pro Cys Lys Phe Thr Leu
 35 40 45
 Ser Pro Glu Asp Gln Gly Pro Leu Asp Ile Glu Trp Leu Ile Ser
 50 55 60
 Pro Ala Asp Asn Gln Lys Val Asp Gln Val Ile Ile Leu Tyr Ser

| 65 | | | | | | | | | | 70 | | | | | 75 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Gly | Asp | Lys | Ile | Tyr | Asp | Asp | Tyr | Tyr | Pro | Asp | Leu | Lys | Gly | Arg | | | | | |
| | | | | 80 | | | | | 85 | | | | | 90 | | | | | |
| Val | His | Phe | Thr | Ser | Asn | Asp | Leu | Lys | Ser | Gly | Asp | Ala | Ser | Ile | | | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | | | |
| Asn | Val | Thr | Asn | Leu | Gln | Leu | Ser | Asp | Ile | Gly | Thr | Tyr | Gln | Cys | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Lys | Val | Lys | Lys | Ala | Pro | Gly | Val | Ala | Asn | Lys | Lys | Ile | His | Leu | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Val | Val | Leu | Val | Lys | Pro | Ser | Gly | Ala | Arg | Cys | Tyr | Val | Asp | Gly | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Ser | Glu | Glu | Ile | Gly | Ser | Asp | Phe | Lys | Ile | Lys | Cys | Glu | Pro | Lys | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Glu | Gly | Ser | Leu | Pro | Leu | Gln | Tyr | Glu | Trp | Gln | Lys | Leu | Ser | Asp | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Ser | Gln | Lys | Met | Pro | Thr | Ser | Trp | Leu | Ala | Glu | Met | Thr | Ser | Ser | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Val | Ile | Ser | Val | Lys | Asn | Ala | Ser | Ser | Glu | Tyr | Ser | Gly | Thr | Tyr | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Ser | Cys | Thr | Val | Arg | Asn | Arg | Val | Gly | Ser | Asp | Gln | Cys | Leu | Leu | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Arg | Leu | Asn | Val | Val | Pro | Pro | Ser | Asn | Lys | Ala | Gly | Leu | Ile | Ala | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Gly | Ala | Ile | Ile | Gly | Thr | Leu | Leu | Ala | Leu | Ala | Leu | Ile | Gly | Leu | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Ile | Ile | Phe | Cys | Cys | Arg | Lys | Lys | Arg | Arg | Glu | Glu | Lys | Tyr | Glu | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Lys | Glu | Val | His | His | Asp | Ile | Arg | Glu | Asp | Val | Pro | Pro | Pro | Lys | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Ser | Arg | Thr | Ser | Thr | Ala | Arg | Ser | Tyr | Ile | Gly | Ser | Asn | His | Ser | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Ser | Leu | Gly | Ser | Met | Ser | Pro | Ser | Asn | Met | Glu | Gly | Tyr | Ser | Lys | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| Thr | Gln | Tyr | Asn | Gln | Val | Pro | Ser | Glu | Asp | Phe | Glu | Arg | Thr | Pro | | | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | | | |
| Gln | Ser | Pro | Thr | Leu | Pro | Pro | Ala | Lys | Phe | Lys | Tyr | Pro | Tyr | Lys | | | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | | | |
| Thr | Asp | Gly | Ile | Thr | Val | Val | | | | | | | | | | | | | |

<210> 506
 <211> 1705
 <212> DNA
 <213> Homo Sapien

<400> 506
 tgaaatgact tccacggctg ggacgggaac cttccacca cagctatgcc 50
 tctgattggg gaatggtgaa ggtgcctgtc taacttttct gtaaaaagaa 100
 ccagctgcct ccaggcagcc agccctcaag catcacttac aggaccagag 150
 ggacaagaca tgactgtgat gaggagctgc tttcgccaat ttaacaccaa 200
 gaagaattga ggctgcttgg gaggaaggcc aggaggaaca cgagactgag 250
 agatgaattt tcaacagagg ctgcaaagcc tgtggacttt agccagaccc 300
 ttctgccctc ctttgctggc gacagcctct caaatgcaga tggttgtgct 350
 cccttgccctg ggttttaccc tgcttctctg gagccaggta tcagggggccc 400
 agggccaaga attccacttt gggccctgcc aagtgaaggg ggttgttccc 450
 cagaaactgt gggaagcctt ctgggctgtg aaagacacta tgcaagctca 500
 ggataacatc acgagtgtcc ggctgctgca gcaggagggt ctgcagaacg 550
 tctcggatgc tgagagctgt taccttgtcc acaccctgct ggagttctac 600
 ttgaaaactg ttttcaaaaa ccaccacaat agaacagttg aagtcaggac 650
 tctgaagtca ttctctactc tggccaacaa ctttgttctc atcgtgtcac 700
 aactgcaacc cagtcaagaa aatgagatgt tttccatcag agacagtgca 750
 cacaggcggg ttctgctatt cgggagagca ttcaaacagt tggacgtaga 800
 agcagctctg accaaagccc ttggggaagt ggacattctt ctgacctgga 850
 tgcagaaatt ctacaagctc tgaatgtcta gaccaggacc tccctcccc 900
 tggcactggg ttgttccctg tgtcatttca aacagtctcc cttcttatgc 950
 tgttcactgg acacttcacg cccttggcca tgggtcccat tcttggcca 1000
 ggattattgt caaagaagtc attctttaag cagcgccagt gacagtcagg 1050
 gaaggctgct ctggatgctg tgaagagtct acagagaaga ttcttgtatt 1100
 tattacaact ctatttaatt aatgtcagta tttcaactga agttctatatt 1150
 atttgtgaga ctgtaagtta catgaaggca gcagaatatt gtgccccatg 1200
 cttctttacc cctcacaatc cttgccacag tgtggggcag tggatgggtg 1250

cttagtaagt acttaataaa ctgtggtgct ttttttggcc tgtctttgga 1300
 ttgttaaaaa acagagaggg atgcttggat gtaaaactga acttcagagc 1350
 atgaaaatca cactgtcttc tgatatctgc agggacagag cattgggggtg 1400
 ggggtaaggt gcatctgttt gaaaagtaaa cgataaaatg tggattaaag 1450
 tgcccagcac aaagcagatc ctcaataaac atttcatttc ccacccacac 1500
 tcgccagctc accccatcat ccctttccct tgggtgccctc cttttttttt 1550
 tatectagtc attcttccct aatcttccac ttgagtgtca agctgacctt 1600
 gctgatgggtg acattgcacc tggatgtact atccaatctg tgatgacatt 1650
 ccctgctaataaaaagacaac ataactccaa aaaaaaaaaa aaaaaaaaaa 1700
 aaaaa 1705

<210> 507
 <211> 206
 <212> PRT
 <213> Homo Sapien

<400> 507
 Met Asn Phe Gln Gln Arg Leu Gln Ser Leu Trp Thr Leu Ala Arg
 1 5 10 15
 Pro Phe Cys Pro Pro Leu Leu Ala Thr Ala Ser Gln Met Gln Met
 20 25 30
 Val Val Leu Pro Cys Leu Gly Phe Thr Leu Leu Leu Trp Ser Gln
 35 40 45
 Val Ser Gly Ala Gln Gly Gln Glu Phe His Phe Gly Pro Cys Gln
 50 55 60
 Val Lys Gly Val Val Pro Gln Lys Leu Trp Glu Ala Phe Trp Ala
 65 70 75
 Val Lys Asp Thr Met Gln Ala Gln Asp Asn Ile Thr Ser Ala Arg
 80 85 90
 Leu Leu Gln Gln Glu Val Leu Gln Asn Val Ser Asp Ala Glu Ser
 95 100 105
 Cys Tyr Leu Val His Thr Leu Leu Glu Phe Tyr Leu Lys Thr Val
 110 115 120
 Phe Lys Asn His His Asn Arg Thr Val Glu Val Arg Thr Leu Lys
 125 130 135
 Ser Phe Ser Thr Leu Ala Asn Asn Phe Val Leu Ile Val Ser Gln
 140 145 150

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Gln | Pro | Ser | Gln | Glu | Asn | Glu | Met | Phe | Ser | Ile | Arg | Asp | Ser | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| | | | | | | | | | | | | | | | |
| Ala | His | Arg | Arg | Phe | Leu | Leu | Phe | Arg | Arg | Ala | Phe | Lys | Gln | Leu | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| | | | | | | | | | | | | | | | |
| Asp | Val | Glu | Ala | Ala | Leu | Thr | Lys | Ala | Leu | Gly | Glu | Val | Asp | Ile | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| | | | | | | | | | | | | | | | |
| Leu | Leu | Thr | Trp | Met | Gln | Lys | Phe | Tyr | Lys | Leu | | | | | |
| | | | | 200 | | | | | 205 | | | | | | |

<210> 508
 <211> 924
 <212> DNA
 <213> Homo Sapien

<400> 508
 aaggagcagc ccgcaagcac caagtgagag gcatgaagtt acagtgtgtt 50
 tccctttggc tcctgggtac aatactgata ttgtgctcag tagacaacca 100
 cggcttcagg agatgtctga tttccacaga catgcaccat atagaagaga 150
 gtttccaaga aatcaaaaga gccatccaag ctaaggacac cttcccaa 200
 gtcactatcc tgtccacatt ggagactctg cagatcatta agcccttaga 250
 tgtgtgctgc gtgaccaaga acctcctggc gttctacgtg gacaggggtg 300
 tcaaggatca tcaggagcca aacccccaaa tcttgagaaa aatcagcagc 350
 attgccaaact ctttcctcta catgcagaaa actctgcggc aatgtcagga 400
 acagaggcag tgtcactgca ggcaggaagc caccaatgcc accagagtca 450
 tccatgacaa ctatgatcag ctggagggtcc acgctgctgc cattaaatcc 500
 ctggggagagc tcgacgtctt tctagcctgg attaataaga atcatgaagt 550
 aatgtttctca gcttgatgac aaggaacctg tatagtgatc cagggatgaa 600
 caccacctgt gcggtttact gtgggagaca gccaccttg aaggggaagg 650
 agatggggaa ggcccccttg agctgaaagt cccactggct ggcctcaggc 700
 tgtcttattc cgcttgaaaa taggcaaaaa gtctactgtg gtatttgtaa 750
 taaactctat ctgctgaaag ggcctgcagg ccatcctggg agtaaagggc 800
 tgccttccca tctaatttat tgtaaagtca tatagtccat gtctgtgatg 850
 tgagccaagt gatatcctgt agtacacatt gtactgagtg gtttttctga 900
 ataaattcca tattttacct atga 924

<210> 509

<211> 177
 <212> PRT
 <213> Homo Sapien

<400> 509

```

Met Lys Leu Gln Cys Val Ser Leu Trp Leu Leu Gly Thr Ile Leu
 1             5             10             15

Ile Leu Cys Ser Val Asp Asn His Gly Leu Arg Arg Cys Leu Ile
          20             25             30

Ser Thr Asp Met His His Ile Glu Glu Ser Phe Gln Glu Ile Lys
          35             40             45

Arg Ala Ile Gln Ala Lys Asp Thr Phe Pro Asn Val Thr Ile Leu
          50             55             60

Ser Thr Leu Glu Thr Leu Gln Ile Ile Lys Pro Leu Asp Val Cys
          65             70             75

Cys Val Thr Lys Asn Leu Leu Ala Phe Tyr Val Asp Arg Val Phe
          80             85             90

Lys Asp His Gln Glu Pro Asn Pro Lys Ile Leu Arg Lys Ile Ser
          95             100            105

Ser Ile Ala Asn Ser Phe Leu Tyr Met Gln Lys Thr Leu Arg Gln
          110            115            120

Cys Gln Glu Gln Arg Gln Cys His Cys Arg Gln Glu Ala Thr Asn
          125            130            135

Ala Thr Arg Val Ile His Asp Asn Tyr Asp Gln Leu Glu Val His
          140            145            150

Ala Ala Ala Ile Lys Ser Leu Gly Glu Leu Asp Val Phe Leu Ala
          155            160            165

Trp Ile Asn Lys Asn His Glu Val Met Phe Ser Ala
          170            175

```

<210> 510
 <211> 996
 <212> DNA
 <213> Homo Sapien

<400> 510

```

cccgtagccaa gagtgacgta agtaccgcct atagagtcta taggcccact 50

tggcttcggtt agaacgcggc tacaattaat acataacctt atgtatcata 100

cacatacgat ttaggtgaca ctatagaata acatccactt tgcctttctc 150

tccacaggtg tccactccca ggtccaactg cacctcgggt ctatcgataa 200

tctcagcacc agccactcag agcagggcac gatgttgggg gcccgccctca 250

```

ggctctgggt ctgtgccttg tgcagcgtct gcagcatgag cgtcctcaga 300
 gcctatccca atgcctcccc actgctcggc tccagctggg gtggcctgat 350
 ccacctgtac acagccacag ccaggaacag ctaccacctg cagatccaca 400
 agaatggcca tgtggatggc gcaccccatc agaccatcta cagtgccctg 450
 atgatcagat cagaggatgc tggctttgtg gtgattacag gtgtgatgag 500
 cagaagatac ctctgcatgg atttcagagg caacattttt ggatcacact 550
 atttcgaccc ggagaactgc aggttccaac accagacgct ggaaaacggg 600
 tacgacgtct accactctcc tcagtatcac ttcttggcca gtctgggccg 650
 ggcgaagaga gccttcctgc caggcatgaa cccacccccg tactcccagt 700
 tcctgtcccc gaggaacgag atccccctaa ttcacttcaa ccccccata 750
 ccacggcggc acacccggag cgccgaggac gactcggagc gggaccccct 800
 gaacgtgctg aagccccggg cccggatgac cccggccccg gcctcctgtt 850
 cacaggagct cccgagcgcc gaggacaaca gcccgatggc cagtgaccca 900
 ttaggggtgg tcaggggcgg tcgagtgaac acgcacgctg ggggaacggg 950
 cccggaaggc tgccgcccct tcgccaagtt catctagggt cgctgg 996

<210> 511

<211> 251

<212> PRT

<213> Homo Sapien

<400> 511

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Gly | Ala | Arg | Leu | Arg | Leu | Trp | Val | Cys | Ala | Leu | Cys | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Val | Cys | Ser | Met | Ser | Val | Leu | Arg | Ala | Tyr | Pro | Asn | Ala | Ser | Pro |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Leu | Leu | Gly | Ser | Ser | Trp | Gly | Gly | Leu | Ile | His | Leu | Tyr | Thr | Ala |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Thr | Ala | Arg | Asn | Ser | Tyr | His | Leu | Gln | Ile | His | Lys | Asn | Gly | His |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Val | Asp | Gly | Ala | Pro | His | Gln | Thr | Ile | Tyr | Ser | Ala | Leu | Met | Ile |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Arg | Ser | Glu | Asp | Ala | Gly | Phe | Val | Val | Ile | Thr | Gly | Val | Met | Ser |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Arg | Arg | Tyr | Leu | Cys | Met | Asp | Phe | Arg | Gly | Asn | Ile | Phe | Gly | Ser |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | |
|---------------------|---------------------|-------------------------|
| His Tyr Phe Asp | Pro Glu Asn Cys Arg | Phe Gln His Gln Thr Leu |
| 110 | | 115 120 |
| Glu Asn Gly Tyr Asp | Val Tyr His Ser | Pro Gln Tyr His Phe Leu |
| 125 | | 130 135 |
| Val Ser Leu Gly Arg | Ala Lys Arg Ala | Phe Leu Pro Gly Met Asn |
| 140 | | 145 150 |
| Pro Pro Pro Tyr Ser | Gln Phe Leu Ser | Arg Arg Asn Glu Ile Pro |
| 155 | | 160 165 |
| Leu Ile His Phe Asn | Thr Pro Ile Pro | Arg Arg His Thr Arg Ser |
| 170 | | 175 180 |
| Ala Glu Asp Asp Ser | Glu Arg Asp Pro | Leu Asn Val Leu Lys Pro |
| 185 | | 190 195 |
| Arg Ala Arg Met Thr | Pro Ala Pro Ala | Ser Cys Ser Gln Glu Leu |
| 200 | | 205 210 |
| Pro Ser Ala Glu Asp | Asn Ser Pro Met | Ala Ser Asp Pro Leu Gly |
| 215 | | 220 225 |
| Val Val Arg Gly Gly | Arg Val Asn Thr | His Ala Gly Gly Thr Gly |
| 230 | | 235 240 |
| Pro Glu Gly Cys Arg | Pro Phe Ala Lys | Phe Ile |
| 245 | | 250 |

<210> 512

<211> 2015

<212> DNA

<213> Homo Sapien

<400> 512

```

ggaaaaggta cccgcgagag acagccagca gttctgtgga gcagcggtagg 50
ccggctagga tgggctgtct ctgggggtctg gctctgcccc ttttcttctt 100
ctgctgggag gttggggtct ctgggagctc tgcaggcccc agcaccgcga 150
gagcagacac tgcgatgaca acggacgaca cagaagtgcc cgctatgact 200
ctagcaccgg gccacgccgc tctggaaact caaacgctga gcgctgagac 250
ctcttctagg gcctcaaccc cagccggccc cattccagaa gcagagacca 300
ggggagccaa gagaatttcc cctgcaagag agaccaggag tttcacaaaa 350
acatctccca acttcatggt gctgatcgcc acctccgtgg agacatcagc 400
cgccagtggc agccccgagg gagctggaat gaccacagtt cagaccatca 450
caggcagtga tcccaggaa gccatctttg acaccctttg caccgatgac 500
agctctgaag aggcaaagac actcacaatg gacatattga cattggctca 550

```

cacctccaca gaagctaagg gcctgtcctc agagagcagt gcctcttccg 600
acggccccca tccagtcatc accccgtcac gggcctcaga gagcagcgcc 650
tcttccgacg gcccccatcc agtcatcacc ccgtcacggg cctcagagag 700
cagcgctctt tccgacggcc cccatccagt catcaccccg tcatgggtccc 750
cgggatctga tgtcactctc ctcgctgaag ccctgggtgac tgtcacaaac 800
atcgagggtta ttaattgcag catcacagaa atagaaacaa caacttccag 850
catccctggg gcctcagaca tagatctcat cccacggaa ggggtgaagg 900
cctcgtcac ctccgatcca ccagctctgc ctgactccac tgaagcaaaa 950
ccacacatca ctgaggtcac agcctctgcc gagaccctgt ccacagccgg 1000
caccacagag tcagctgcac ctcatgccac ggttgggacc ccactcccca 1050
ctaacagcgc cacagaaaga gaagtgcag caccgggggc cagcacctc 1100
agtggagctc tggtcacagt tagcaggaat cccctggaag aaacctcagc 1150
cctctctgtt gagacaccaa gttacgtcaa agtctcagga gcagctccgg 1200
tctccataga ggctgggtca gcagtgggca aaacaacttc ctttgctggg 1250
agctctgctt cctcctacag cccctcggaa gccgccctca agaacttcac 1300
cccttcagag acaccgacca tggacatcgc aaccaagggg cccttcccca 1350
ccagcagga ccctcttcct tctgtccctc cgactacaac caacagcagc 1400
cgagggacga acagcacctt agccaagatc acaacctcag cgaagaccac 1450
gatgaagccc caacagccac gccacgact gcccgacga ggccgaccac 1500
agacgtgagt gcaggtgaaa atggaggttt cctcctcctg cggctgagtg 1550
tggcttcccc ggaagacctc actgaccca gagtggcaga aaggctgatg 1600
cagcagctcc accgggaact ccacgccac gcgcctcact tccaggtctc 1650
cttactgctg gtcaggagag gctaacggac atcagctgca gccaggcatg 1700
tcccgatatg caaaagaggg tgctgccctc agcctggggc cccaccgaca 1750
gactgcagct gcgttactgt gctgagaggt acccagaagg ttcccatgaa 1800
gggcagcatg tccaagcccc taaccccaga tgtggcaaca ggaccctcgc 1850
tcacatccac cggagtgtat gtatggggag gggcttcacc tggtcccaga 1900
gggtgtccttg gactcacctt ggcacatggt ctgtgtttca gtaaagagag 1950

acctgatcac ccattctgtgt gcttccatcc tgcattaaaa ttcactcagt 2000

gtggcccaaa aaaaa 2015

<210> 513

<211> 482

<212> PRT

<213> Homo Sapien

<400> 513

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Cys | Leu | Trp | Gly | Leu | Ala | Leu | Pro | Leu | Phe | Phe | Phe | Cys |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Glu | Val | Gly | Val | Ser | Gly | Ser | Ser | Ala | Gly | Pro | Ser | Thr | Arg |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ala | Asp | Thr | Ala | Met | Thr | Thr | Asp | Asp | Thr | Glu | Val | Pro | Ala |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Thr | Leu | Ala | Pro | Gly | His | Ala | Ala | Leu | Glu | Thr | Gln | Thr | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Ala | Glu | Thr | Ser | Ser | Arg | Ala | Ser | Thr | Pro | Ala | Gly | Pro | Ile |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Glu | Ala | Glu | Thr | Arg | Gly | Ala | Lys | Arg | Ile | Ser | Pro | Ala | Arg |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Thr | Arg | Ser | Phe | Thr | Lys | Thr | Ser | Pro | Asn | Phe | Met | Val | Leu |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Ala | Thr | Ser | Val | Glu | Thr | Ser | Ala | Ala | Ser | Gly | Ser | Pro | Glu |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ala | Gly | Met | Thr | Thr | Val | Gln | Thr | Ile | Thr | Gly | Ser | Asp | Pro |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Glu | Ala | Ile | Phe | Asp | Thr | Leu | Cys | Thr | Asp | Asp | Ser | Ser | Glu |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Ala | Lys | Thr | Leu | Thr | Met | Asp | Ile | Leu | Thr | Leu | Ala | His | Thr |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Thr | Glu | Ala | Lys | Gly | Leu | Ser | Ser | Glu | Ser | Ser | Ala | Ser | Ser |
| | | | | 170 | | | | | 175 | | | | | 180 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Gly | Pro | His | Pro | Val | Ile | Thr | Pro | Ser | Arg | Ala | Ser | Glu | Ser |
| | | | | 185 | | | | | 190 | | | | | 195 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Ala | Ser | Ser | Asp | Gly | Pro | His | Pro | Val | Ile | Thr | Pro | Ser | Arg |
| | | | | 200 | | | | | 205 | | | | | 210 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ser | Glu | Ser | Ser | Ala | Ser | Ser | Asp | Gly | Pro | His | Pro | Val | Ile |
| | | | | 215 | | | | | 220 | | | | | 225 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Pro | Ser | Trp | Ser | Pro | Gly | Ser | Asp | Val | Thr | Leu | Leu | Ala | Glu |
| | | | | 230 | | | | | 235 | | | | | 240 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ala | Leu | Val | Thr | Val | Thr | Asn | Ile | Glu | Val | Ile | Asn | Cys | Ser | Ile | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Thr | Glu | Ile | Glu | Thr | Thr | Thr | Ser | Ser | Ile | Pro | Gly | Ala | Ser | Asp | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Ile | Asp | Leu | Ile | Pro | Thr | Glu | Gly | Val | Lys | Ala | Ser | Ser | Thr | Ser | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Asp | Pro | Pro | Ala | Leu | Pro | Asp | Ser | Thr | Glu | Ala | Lys | Pro | His | Ile | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Thr | Glu | Val | Thr | Ala | Ser | Ala | Glu | Thr | Leu | Ser | Thr | Ala | Gly | Thr | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Thr | Glu | Ser | Ala | Ala | Pro | His | Ala | Thr | Val | Gly | Thr | Pro | Leu | Pro | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Thr | Asn | Ser | Ala | Thr | Glu | Arg | Glu | Val | Thr | Ala | Pro | Gly | Ala | Thr | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Thr | Leu | Ser | Gly | Ala | Leu | Val | Thr | Val | Ser | Arg | Asn | Pro | Leu | Glu | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Glu | Thr | Ser | Ala | Leu | Ser | Val | Glu | Thr | Pro | Ser | Tyr | Val | Lys | Val | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Ser | Gly | Ala | Ala | Pro | Val | Ser | Ile | Glu | Ala | Gly | Ser | Ala | Val | Gly | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Lys | Thr | Thr | Ser | Phe | Ala | Gly | Ser | Ser | Ala | Ser | Ser | Tyr | Ser | Pro | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Ser | Glu | Ala | Ala | Leu | Lys | Asn | Phe | Thr | Pro | Ser | Glu | Thr | Pro | Thr | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Met | Asp | Ile | Ala | Thr | Lys | Gly | Pro | Phe | Pro | Thr | Ser | Arg | Asp | Pro | |
| | | | | 425 | | | | | 430 | | | | | 435 | |
| Leu | Pro | Ser | Val | Pro | Pro | Thr | Thr | Thr | Asn | Ser | Ser | Arg | Gly | Thr | |
| | | | | 440 | | | | | 445 | | | | | 450 | |
| Asn | Ser | Thr | Leu | Ala | Lys | Ile | Thr | Thr | Ser | Ala | Lys | Thr | Thr | Met | |
| | | | | 455 | | | | | 460 | | | | | 465 | |
| Lys | Pro | Gln | Gln | Pro | Arg | Pro | Arg | Leu | Pro | Gly | Arg | Gly | Arg | Pro | |
| | | | | 470 | | | | | 475 | | | | | 480 | |

Gln Thr

<210> 514
 <211> 2284
 <212> DNA
 <213> Homo Sapien

<400> 514

```
gcggagcatc cgctgcggtc ctcgccgaga cccccgcgcg gattcgccgg 50
tccttcccgc gggcgcgaca gagctgtcct cgcacctgga tggcagcagg 100
ggcgccgggg tcctctcgac gccagagaga aatctcatca tctgtgcagc 150
cttcttaaag caaactaaga ccagagggag gattatcctt gacctttgaa 200
gacaaaaact aaactgaaat ttaaaatggt cttcggggga gaaggagct 250
tgacttacac tttggtaata atttgcttcc tgacactaag gctgtctgct 300
agtcagaatt gcctcaaaaa gagtctagaa gatgttgtca ttgacatcca 350
gtcatctctt tctaaggga tcaaggcaa tgagcccgtata taaacttcaa 400
ctcaagaaga ctgcattaat tcttgctgtt caacaaaaaa catatcaggg 450
gacaaagcat gtaacttgat gatcttcgac actcgaaaaa cagctagaca 500
acccaactgc tacctatctt tctgtcccaa cgaggaagcc tgtccattga 550
aaccagcaaa aggacttatg agttacagga taattacaga ttttccatct 600
ttgaccagaa atttgccaa ccaagagtta cccaggaag attctctctt 650
acatggccaa ttttcacaag cagtcactcc cctagcccat catcacacag 700
attattcaaa gccaccgat atctcatgga gagacacact ttctcagaag 750
tttgatcct cagatcacct ggagaaacta ttaagatgg atgaagcaag 800
tgcccagctc cttgcttata aggaaaaagg ccattctcag agttcacaat 850
tttctctga tcaagaaata gctcatctgc tgcttgaaaa tgtgagtgcg 900
ctcccagcta cgggtggcagt tgcttctcca cataccacct cggctactcc 950
aaagcccgcc acccttctac ccaccaatgc ttcagtgaca ccttctggga 1000
cttcccagcc acagctggcc accacagctc cacctgtaac cactgtcact 1050
tctcagcctc ccacgacct catttctaca gtttttacac gggctgcggc 1100
tacactccaa gcaatggcta caacagcagt tctgactacc acctttcagg 1150
cacctacgga ctcgaaaggc agcttagaaa ccataccgtt tacagaaatc 1200
tccaacttaa ctttgaacac agggaatgtg tataacccta ctgcactttc 1250
tatgtcaa atgtggagtctt ccactatgaa taaaactgct tcctgggaag 1300
gtagggaggc cagtccaggc agttcctccc agggcagtgt tccagaaaat 1350
cagtacggcc ttccatttga aaaatggctt cttatcggtt ccctgctctt 1400
```

tgggtgtcctg ttcctgggtga taggcctcgt cctcctgggt agaatccttt 1450
 cggaatcact ccgcaggaaa cgttactcaa gactggatta tttgatcaat 1500
 gggatctatg tggacatcta aggatggaac tcggtgtctc ttaattcatt 1550
 tagtaaccag aagcccaaata gcaatgagtt tctgctgact tgctagtctt 1600
 agcaggaggt tgtattttga agacaggaaa atgccccctt ctgctttcct 1650
 tttttttttt ggagacagag tcttgctctg ttgccaggc tggagtgcag 1700
 tagcacgata tcggctctca ccgcaacctc cgtctcctgg gttcaagcga 1750
 ttctcctgcc tcagcctcct aagtatctgg gattacaggc atgtgccacc 1800
 acacctgggt gatttttcta ttttttagtag agacgggggt tcaccatgtt 1850
 ggtcaggctg gtctcaaact cctgacctag tgatccaccc tcctcggcct 1900
 cccaaagtgc tgggattaca ggcattgagc accacagctg gcccccttct 1950
 gttttatgtt tgggttttga gaaggaatga agtgggaacc aaattaggta 2000
 attttgggta atctgtctct aaaatattag ctaaaaacaa agctctatgt 2050
 aaagtaataa agtataattg ccatataaat ttcaaaattc aactggcttt 2100
 tatgcaaaga aacagggttag gacatctagg ttccaattca ttcacattct 2150
 tggttccaga taaaatcaac tgtttatatc aatttctaata ggatttgctt 2200
 ttctttttat atggattcct ttaaaactta ttccagatgt agttccttcc 2250
 aattaaatat ttgaataaat cttttgttac tcaa 2284

<210> 515
 <211> 431
 <212> PRT
 <213> Homo Sapien

<400> 515
 Met Phe Phe Gly Gly Glu Gly Ser Leu Thr Tyr Thr Leu Val Ile
 1 5 10 15
 Ile Cys Phe Leu Thr Leu Arg Leu Ser Ala Ser Gln Asn Cys Leu
 20 25 30
 Lys Lys Ser Leu Glu Asp Val Val Ile Asp Ile Gln Ser Ser Leu
 35 40 45
 Ser Lys Gly Ile Arg Gly Asn Glu Pro Val Tyr Thr Ser Thr Gln
 50 55 60
 Glu Asp Cys Ile Asn Ser Cys Cys Ser Thr Lys Asn Ile Ser Gly
 65 70 75

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Asp | Lys | Ala | Cys | Asn | Leu | Met | Ile | Phe | Asp | Thr | Arg | Lys | Thr | Ala | | 80 | 85 | 90 |
| Arg | Gln | Pro | Asn | Cys | Tyr | Leu | Phe | Phe | Cys | Pro | Asn | Glu | Glu | Ala | | 95 | 100 | 105 |
| Cys | Pro | Leu | Lys | Pro | Ala | Lys | Gly | Leu | Met | Ser | Tyr | Arg | Ile | Ile | | 110 | 115 | 120 |
| Thr | Asp | Phe | Pro | Ser | Leu | Thr | Arg | Asn | Leu | Pro | Ser | Gln | Glu | Leu | | 125 | 130 | 135 |
| Pro | Gln | Glu | Asp | Ser | Leu | Leu | His | Gly | Gln | Phe | Ser | Gln | Ala | Val | | 140 | 145 | 150 |
| Thr | Pro | Leu | Ala | His | His | His | Thr | Asp | Tyr | Ser | Lys | Pro | Thr | Asp | | 155 | 160 | 165 |
| Ile | Ser | Trp | Arg | Asp | Thr | Leu | Ser | Gln | Lys | Phe | Gly | Ser | Ser | Asp | | 170 | 175 | 180 |
| His | Leu | Glu | Lys | Leu | Phe | Lys | Met | Asp | Glu | Ala | Ser | Ala | Gln | Leu | | 185 | 190 | 195 |
| Leu | Ala | Tyr | Lys | Glu | Lys | Gly | His | Ser | Gln | Ser | Ser | Gln | Phe | Ser | | 200 | 205 | 210 |
| Ser | Asp | Gln | Glu | Ile | Ala | His | Leu | Leu | Pro | Glu | Asn | Val | Ser | Ala | | 215 | 220 | 225 |
| Leu | Pro | Ala | Thr | Val | Ala | Val | Ala | Ser | Pro | His | Thr | Thr | Ser | Ala | | 230 | 235 | 240 |
| Thr | Pro | Lys | Pro | Ala | Thr | Leu | Leu | Pro | Thr | Asn | Ala | Ser | Val | Thr | | 245 | 250 | 255 |
| Pro | Ser | Gly | Thr | Ser | Gln | Pro | Gln | Leu | Ala | Thr | Thr | Ala | Pro | Pro | | 260 | 265 | 270 |
| Val | Thr | Thr | Val | Thr | Ser | Gln | Pro | Pro | Thr | Thr | Leu | Ile | Ser | Thr | | 275 | 280 | 285 |
| Val | Phe | Thr | Arg | Ala | Ala | Ala | Thr | Leu | Gln | Ala | Met | Ala | Thr | Thr | | 290 | 295 | 300 |
| Ala | Val | Leu | Thr | Thr | Thr | Phe | Gln | Ala | Pro | Thr | Asp | Ser | Lys | Gly | | 305 | 310 | 315 |
| Ser | Leu | Glu | Thr | Ile | Pro | Phe | Thr | Glu | Ile | Ser | Asn | Leu | Thr | Leu | | 320 | 325 | 330 |
| Asn | Thr | Gly | Asn | Val | Tyr | Asn | Pro | Thr | Ala | Leu | Ser | Met | Ser | Asn | | 335 | 340 | 345 |
| Val | Glu | Ser | Ser | Thr | Met | Asn | Lys | Thr | Ala | Ser | Trp | Glu | Gly | Arg | | 350 | 355 | 360 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Ala | Ser | Pro | Gly | Ser | Ser | Ser | Gln | Gly | Ser | Val | Pro | Glu | Asn |
| | | | | 365 | | | | | 370 | | | | | 375 |
| | | | | | | | | | | | | | | |
| Gln | Tyr | Gly | Leu | Pro | Phe | Glu | Lys | Trp | Leu | Leu | Ile | Gly | Ser | Leu |
| | | | | 380 | | | | | 385 | | | | | 390 |
| | | | | | | | | | | | | | | |
| Leu | Phe | Gly | Val | Leu | Phe | Leu | Val | Ile | Gly | Leu | Val | Leu | Leu | Gly |
| | | | | 395 | | | | | 400 | | | | | 405 |
| | | | | | | | | | | | | | | |
| Arg | Ile | Leu | Ser | Glu | Ser | Leu | Arg | Arg | Lys | Arg | Tyr | Ser | Arg | Leu |
| | | | | 410 | | | | | 415 | | | | | 420 |
| | | | | | | | | | | | | | | |
| Asp | Tyr | Leu | Ile | Asn | Gly | Ile | Tyr | Val | Asp | Ile | | | | |
| | | | | 425 | | | | | 430 | | | | | |

<210> 516

<211> 2749

<212> DNA

<213> Homo Sapien

<220>

<221> unsure

<222> 1869, 1887

<223> unknown base

<400> 516

```

ctcccacggt gtccagcgcc cagaatgcgg cttctgggcc tgctatgggg 50

ttgcctgctg ctcccaggtt atgaagccct ggaggggcca gaggaatca 100

gcgggttcga aggggacact gtgtccctgc agtgcaccta caggaagag 150

ctgagggacc accggaagta ctggtgcagg aagggtggga tcctcttctc 200

tcgctgctct ggcaccatct atgcagaaga agaaggccag gagacaatga 250

agggcagggt gtccatccgt gacagccgcc aggagctctc gctcattgtg 300

acctgtgga acctcaccct gcaagacgct ggggagtact ggtgtgggg 350

cgaaaaacgg ggccccgatg agtctttact gatctctctg ttcgtctttc 400

caggaccctg ctgtctctcc tcccccttct ccaccttcca gcctctggct 450

acaacacgcc tgcagcccaa ggcaaaagct cagcaaacc agccccagg 500

attgacttct cctgggctct acccggcagc caccacagcc aagcagggga 550

agacaggggc tgaggccct ccattgccag ggacttcca gtacgggcac 600

gaaaggactt ctcagtacac aggaacctct cctcaccag cgacctctcc 650

tcctgcaggg agctcccgcc ccccatgca gctggactcc acctcagcag 700

aggacaccag tccagctctc agcagtggca gctctaagcc cagggtgtcc 750

atccccgatgg tccgcatact ggccccagtc ctggtgctgc tgagccttct 800

```


gtcagccgca ggccctgatcg ccttctgcag ccacctgctc ctgtggagaa 850
aggaagctca acaggccacg gagacacaga ggaacgagaa gttctggctc 900
tcacgcttga ctgcgaggga aaaggaagcc ccttcccagg cccctgaggg 950
ggacgtgatc tcgatgcctc ccctccacac atctgaggag gagctgggct 1000
tctcgaagtt tgtctcagcg tagggcagga ggccctcctg gccaggccag 1050
cagtgaagca gtatggctgg ctggatcagc accgattccc gaaagctttc 1100
cacctcagcc tcagagtcca gctgcccgga ctccagggtc ctccccaccc 1150
tccccaggct ctctctttgc atgttccagc ctgacctaga agcgttttgc 1200
agccctggag cccagagcgg tggccttgct ctcccggtg gagactggga 1250
catccctgat aggttcacat ccctgggcag agtaccaggc tgctgaccct 1300
cagcagggcc agacaaggct cagtggatct ggtctgagtt tcaatctgcc 1350
aggaactcct gggcctcatg cccagtgtcg gaccctgcct tcctcccact 1400
ccagacccca ccttgtcttc cctccctggc gtcctcagac ttagtccac 1450
ggtctcctgc atcagctggg gatgaagagg agcatgctgg ggtgagactg 1500
ggattctggc ttctctttga accacctgca tccagccctt caggaagcct 1550
gtgaaaaacg tgattcctgg cccaccaaag acccaccaa accatctctg 1600
ggcttggctg aggactctga attctaaca tgcccagtga ctgtcgact 1650
tgagtttgag ggccagtggg cctgatgaac gctcacaccc cttcagctta 1700
gagtctgcat ttgggctgtg acgtctccac ctgcccctaat agatctgctc 1750
tgtctgcgac accagatcca cgtggggact cccctgaggc ctgctaagtc 1800
caggccttgg tcaggtcagg tgcacattgc aggataagcc caggaccggc 1850
acagaagtgg ttgcctttnc catttgcct ccctggacca tgccttcttg 1900
cctttggaaa aaatgatgaa gaaaacctg gctccttcct tgtctggaaa 1950
gggttacttg cctatgggtt ctggtggcta gagagaaaag tagaaaacca 2000
gagtgcacgt aggtgtctaa cacagaggag agtaggaaca gggcggatac 2050
ctgaaggtga ctccgagtcc agccccctgg agaaggggtc gggggtggtg 2100
gtaaagtagc acaactacta ttttttttct ttttccatta ttattgtttt 2150
ttaagacaga atctcgtgct gctgcccagg ctggagtgca gtggcacgat 2200

ctgcaaactc cgcctcctgg gttcaagtga ttcttctgcc tcagcctccc 2250
 gagtagctgg gattacaggc acgcaccacc acacctggct aatttttgta 2300
 ctttttagtag agatgggggtt tcaccatggt ggccaggctg gtcttgaact 2350
 cctgacctca aatgagcctc ctgcttcagt ctcccaaatt gccgggatta 2400
 caggcatgag ccactgtgtc tggccctatt tccttttaaaa agtgaaatta 2450
 agagttgttc agtatgcaaa acttggaag atggaggaga aaaagaaaag 2500
 gaagaaaaaa atgtcaccca tagtctcacc agagactatc attatttcgt 2550
 tttgtgttac ttcttccac tcttttcttc ttcacataat ttgccggtgt 2600
 tctttttaca gagcaattat cttgtatata caactttgta tcctgccttt 2650
 tccacettat cgttccatca ctttattcca gcacttctct gtgttttaca 2700
 gaccttttta taaataaaaat gttcatcagc tgcataaaaa aaaaaaaaaa 2749

<210> 517

<211> 332

<212> PRT

<213> Homo Sapien

<400> 517

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Leu | Leu | Val | Leu | Leu | Trp | Gly | Cys | Leu | Leu | Leu | Pro | Gly |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Tyr | Glu | Ala | Leu | Glu | Gly | Pro | Glu | Glu | Ile | Ser | Gly | Phe | Glu | Gly |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Asp | Thr | Val | Ser | Leu | Gln | Cys | Thr | Tyr | Arg | Glu | Glu | Leu | Arg | Asp |
| | | | | 35 | | | | | 40 | | | | | 45 |
| His | Arg | Lys | Tyr | Trp | Cys | Arg | Lys | Gly | Gly | Ile | Leu | Phe | Ser | Arg |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Cys | Ser | Gly | Thr | Ile | Tyr | Ala | Glu | Glu | Glu | Gly | Gln | Glu | Thr | Met |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Lys | Gly | Arg | Val | Ser | Ile | Arg | Asp | Ser | Arg | Gln | Glu | Leu | Ser | Leu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ile | Val | Thr | Leu | Trp | Asn | Leu | Thr | Leu | Gln | Asp | Ala | Gly | Glu | Tyr |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Trp | Cys | Gly | Val | Glu | Lys | Arg | Gly | Pro | Asp | Glu | Ser | Leu | Leu | Ile |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Ser | Leu | Phe | Val | Phe | Pro | Gly | Pro | Cys | Cys | Pro | Pro | Ser | Pro | Ser |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Pro | Thr | Phe | Gln | Pro | Leu | Ala | Thr | Thr | Arg | Leu | Gln | Pro | Lys | Ala |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Lys | Ala | Gln | Gln | Thr | Gln | Pro | Pro | Gly | Leu | Thr | Ser | Pro | Gly | Leu | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Tyr | Pro | Ala | Ala | Thr | Thr | Ala | Lys | Gln | Gly | Lys | Thr | Gly | Ala | Glu | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Ala | Pro | Pro | Leu | Pro | Gly | Thr | Ser | Gln | Tyr | Gly | His | Glu | Arg | Thr | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ser | Gln | Tyr | Thr | Gly | Thr | Ser | Pro | His | Pro | Ala | Thr | Ser | Pro | Pro | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Ala | Gly | Ser | Ser | Arg | Pro | Pro | Met | Gln | Leu | Asp | Ser | Thr | Ser | Ala | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Glu | Asp | Thr | Ser | Pro | Ala | Leu | Ser | Ser | Gly | Ser | Ser | Lys | Pro | Arg | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Val | Ser | Ile | Pro | Met | Val | Arg | Ile | Leu | Ala | Pro | Val | Leu | Val | Leu | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Leu | Ser | Leu | Leu | Ser | Ala | Ala | Gly | Leu | Ile | Ala | Phe | Cys | Ser | His | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Leu | Leu | Leu | Trp | Arg | Lys | Glu | Ala | Gln | Gln | Ala | Thr | Glu | Thr | Gln | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Arg | Asn | Glu | Lys | Phe | Trp | Leu | Ser | Arg | Leu | Thr | Ala | Glu | Glu | Lys | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Glu | Ala | Pro | Ser | Gln | Ala | Pro | Glu | Gly | Asp | Val | Ile | Ser | Met | Pro | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Pro | Leu | His | Thr | Ser | Glu | Glu | Glu | Leu | Gly | Phe | Ser | Lys | Phe | Val | |
| | | | | 320 | | | | | 325 | | | | | 330 | |

Ser Ala

<210> 518

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 518

ccctgcagtg cacctacagg gaag 24

<210> 519

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 519

ctgtcttccc ctgcttggct gtgg 24

<210> 520

<211> 47

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 520

ggtgcaggaa ggggtgggatc ctcttctctc gctgctctgg ccacatc 47

<210> 521

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 521

ccagtgcaca gcaggcaacg aagc 24

<210> 522

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 522

actaggctgt atgcctgggt gggc 24

<210> 523

<211> 43

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 523

gtatgtacaa agcatcggca tggttgcagg agcagtgaca ggc 43

<210> 524

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 524
aatctcagca ccagccactc agagca 26

<210> 525
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 525
gttaaagagg gtgcccttcc agcga 25

<210> 526
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 526
tatcccaatg cctccccact gctc 24

<210> 527
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 527
gatgaacttg gcgaaggggc ggca 24

<210> 528
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 528
aggaggatt atccttgacc tttgaagacc 30

<210> 529
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 529
gaagcaagtg cccagctc 18

<210> 530
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 530
cggggtccctg ctcttttg 18

<210> 531
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 531
caccgtagct gggagcgcac tcac 24

<210> 532
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 532
agtgttaagtc aagctccc 18